

COLLEGE OF SCIENCE

Academic Programs

The College of Science, established in 1977/1978, offers programs leading to a bachelor's degree in Science, with majors in Mathematics, Physics, Chemistry, Biology, Medical Laboratory Sciences, and Statistics. Moreover, the departments of Mathematics, Chemistry, Biology and Physics also have graduate programs leading to M.Sc. The Department of Chemistry also has a Ph.D program.

The college is home to a number of highly developed labs for students and faculty members to receive training, conduct experiments and to write lab papers. The college also has workshops in the fields of mechanics, electronics and glass-blowing.

The College of Science has a number of highly distinguished professors who have affected the students' academic achievement positively and improved quality of scientific research, applied and basic, in the college.

College requirements (30 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
21101	Calculus I	3	3	-	-
22102	Calculus II	3	3	-	21101
22101	General Physics I	3	3	-	-
22107	Laboratory Practice I	1	-	3	22101, or with General Physics
22102	General Physics II	3	3	-	22101, 22107, or with both
22108	Laboratory Practice II	1	-	3	22102 or concurrent
23101	General Chemistry I	3	3	-	-
23107	Laboratory Practice I	3	-	1	23101 or concurrent
23102	General Chemistry II	1	-	3	23102 or concurrent
23108	Laboratory Practice II	1	-	3	23102 or concurrent
24101	General Biology I	3	3	-	-
24107	Laboratory Practice I	1	-	3	24101 or concurrent
24102	General Biology II	3	3	-	24101, 24107 or concurrent
24108	Laboratory Practice II	1	-	3	-
Total		30			

Department requirements: see relevant department requirements.

Free courses: A student must complete six credit hours from courses offered by the university's different departments.

College course descriptions

MTH21101 Calculus I

Topics covered in this course include analytic geometry, continuity, limits, definite and indefinite integration, applications of integration and differentiation.

MTH21102 Calculus II

This course introduces integration and differentiation of exponential and logarithmic functions, trigonometric and partial trigonometric functions, methods of integration, polar coordinates, conic sections, extraordinary integration and indefinite quantities.

PHY22101 General Physics I

In this course, the following subjects are introduced: vectors, laws of two-dimensional motion, linear motion, quantity gravitation, conservation of mechanical energy, rotational kinematics, waves, thermal dynamics, Newton's mechanics, simple harmonic motion.

PHY22102 General Physics II

This course covers electrical fields and potentials, capacitors, electrical circuits, magnetic field induction, RC and RL circuits, electromagnetic waves, optics, interference and diffraction.

PHY22107 Laboratory Practice I

This involves a number of selected experiments in mechanics.

PHY22108 Laboratory Practice II

This includes a number of selected experiments in electricity and magnetism.

CHM23101 General Chemistry 1

In this course, students learn basic concepts in chemistry, structure of atoms, chemical laws calculations, chemical bonding, forms of compounds, general laws in aqueous solutions chemistry, general laws for gases, and other theoretical subjects.

CHM23107 Laboratory Practice I

This course includes qualitative analysis of ionic elements (positive and negative). This will be in addition to different periodic trends. Part of the course will focus on the compositions and their contents.

CHM23102 General Chemistry II

This course introduces basic concepts in properties of solutions, thermodynamics,

mechanical interactions, chemical equilibriums, ion base, electrochemistry. There will also be application of these topics.

CHM23108 Laboratory Practice II

Students in this course will be provided with practical applications on laws of gases, primary formula, volumetric analysis, solubility, molecular weight determination, freezing point depression, heat reaction, crystallization water, chemical equilibriums and other experiments.

BIO24101 General Biology I

Students will learn how to study the structure and function of cell in living organisms, their organs and systems, internal transportation exchange of gas in these organisms, ways of energy generation, and the photosynthesis process.

BIO24107 Laboratory Practice I

This course is an application of topics covered in General Biology I 24101.

BIO24102 General Biology II

In this course, students study hormones and their influence on living organisms, nervous control, animal movement and behavior, reproduction, principles of genetics and its impact on diversity of living organisms.

BIO24108 Laboratory Practice II

This lab course includes a number of experiments on topics covered in General Biology II 24102.

DEPARTMENT OF MATHEMATICS

(1) Specialization Requirements

After successful completion of first year at the university, the student specifies his/her specialization major with the assistance of his/her academic advisor. Then, the student completes an application form submitted to the Faculty of Science.

The following requirements should be met for specialization:

1. Successful completion of two mathematics courses (21101 & 21102) with overall average of 70% at least.
2. Successful completion of two physics courses (22101 & 22102).
3. Successful completion of at least 30 credit hours of which at least 18 credit hours are within the Faculty of Science requirements.

If the number of students applying to mathematics major is more than the required number set by the Faculty Council, then the students will be selected according to their highest average in 21101 & 21102 courses.

(2) Requirements for a degree in mathematics

All candidates for the B.Sc. degree in mathematics should complete successfully 131 credit hours. These hours include university, faculty, and department compulsory and elective courses as well as “free” courses.

Department compulsory courses (48 credits)

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21101
21203	Principles of Differential Equations	3	21201
21211	Principles of Mathematics	3	21102 + Dept. Approval
21212	Modern Analysis I	3	21101
21220	Programming for Mathematics	3	-
21241	Linear Algebra	3	21201
21242	Modern Algebra I	3	21211
21311	Modern Analysis II	3	21212
21312	Complex Analysis	3	21212
21321	Numerical Analysis I	3	21241 & 21220
21342	Modern Algebra II	3	21242
21361	Principles of General Topology	3	21212
21362	Modern Methods in Geometry	3	21211
21399	Scientific Research	3	Dept. Approval

28302	Methods of Statistics I	3	-
28201	Probability Theory I	3	21201
	Total	48	

□ Offered by the Department of Statistics.

II- Department elective courses (24 credit hours)

- 1- 0 to 6 credits are courses offered by the Faculty of Information Technology.
- 2- 18 to 24 credits are to be chosen from the following courses offered by the Department of Mathematics or Department of Statistics..

Course #	Course title	Credits	Prerequisites
21301	Special Functions	3	21203
21302	Partial Differential Equations I	3	21203
21303	Vector Analysis	3	21201
21314	Advanced Calculus	3	21201
21320	Software Packages for Mathematics	3	21220 & 21241
21322	Linear Programming	3	21220 & 21241
21323	Operations Research I	3	21322
21341	Linear Algebra (2)	3	21241
21343	Number Theory	3	21211
21351	History of Mathematics	3	Dept. Approval
21374	Applied Analysis	3	21203 & 21212
21403	Ordinary Differential Equations	3	21203
21414	Functional Analysis	3	21361
21421	Numerical Analysis II	3	21321
21462	Differential Geometry	3	21201 & 21241
21474	Combinatorics & Graph Theory	3	21241
21481	Special Topics I	3	Dept. Approval
21482	Special Topics II	3	Dept. Approval
28202	Methods of Statistics II	3	28201
28304	Probability Theory	3	28302

	II		
□ 28303	Mathematical statistics I	3	28302 & 21212
□ 28305	Mathematical statistics II	3	28304

□ Offered by the Department of Statistics.

Course descriptions

MAT21103 General Mathematics

Cartesian plane, equation of a straight line, equations and inequalities; linear programming; functions, their types, limits and continuity of functions; derivatives of polynomials, algebraic, logarithmic and exponential functions; rules of differentiation, applications of derivatives on extreme values and graphs; definite and indefinite integrals; applications of definite integrals; integration by substitution, matrices, determinants and solving systems of linear equations; partial differentiation.

MAT21104 Mathematics for Pharmacy

Limits and continuity; the derivative, applications of the derivative; integrals, applications of the definite integral; transcendental functions.

MAT21105 Mathematics for Education

Functions and their graphs: linear, quadratic, polynomials, rational, natural exponential, natural logarithmic, sine and cosine functions; limits and the indeterminate form $0/0$, continuity of functions; derivative using rules of differentiation, tangent lines, instantaneous rate of change, instantaneous velocity and applications on extreme values and graphs; definite and indefinite integrals, integration by substitution and by parts; solving first order ordinary differential equations; counting principle, permutations and combinations; the binomial theorem and Pascal's triangle, substitution and elimination methods in solving system of linear equations in two or three variables; matrices, determinants and solving systems of linear equations in two or three variables using inverses and Cramer's rule.

MAT21201 Calculus III

Parametric equations and polar coordinates; vectors in R^2 and R^3 & surfaces; vector-valued functions; partial differentiation with applications; multiple integrals.

MAT21203 Principles of Differential Equations

Classifications and solutions of first-order ordinary differential equations with applications; Higher-order and solutions; power series solutions; Laplace transforms; solutions of systems of linear differential equations.

MAT21211 Principles of Mathematics

Logic and proofs; set theory, relations and functions; cardinality and examples on mathematical structure.

MAT21212 Modern Analysis I

Properties of real numbers; open and closed sets; sequences; limits and continuity; differentiation; Riemann integral.

MAT21220 Programming for Mathematics

Fundamentals of programming; algorithms, types of data and control statements, dimensions, functions and subroutines; some mathematical software with applications.

MAT21241 Linear Algebra I

Matrices, vectors and elementary row operations, operations on matrices, determinants and inverses of matrices, systems of linear equations and method of solutions; vector spaces, linear independence and basis; linear transformations, kernel and range; eigenvalues and eigenvectors.

MAT21242 Modern Algebra I

Binary operations; groups, subgroups, finite groups, cyclic groups, symmetric groups, factor groups, normal subgroups; group homomorphisms; Sylow theorems.

MAT21301 Special Functions

Frobenius method for solving differential equations; special functions like Gamma and Beta functions, Legendre polynomials, Bessel functions, Hermite polynomials, Chebyshev and Laguerre functions.

MAT21302 Partial Differential Equations I

Formation of a partial differential equation; methods of solutions of first order linear and nonlinear partial differential equations; methods of solutions of second order linear and nonlinear partial differential equations; Fourier series and transforms, wave equation, Laplace's equation, potential equation, equation of an infinite wire, heat equation.

MAT21303 Vector Analysis

Vector algebra, vector product, vectors and scalar fields; the gradient, divergence and curl theorems; line, surface and volume integrals, related theorems; curvilinear coordinates.

MAT21311 Modern Analysis II

Metric spaces; Riemann-Stieltjes integral; functions of bounded variations; sequences and series of functions.

MAT21312 Complex Analysis I

Properties of complex numbers; complex functions, derivatives and Cauchy-Riemann equations; elementary functions and elementary transformations; complex integrals, residue theorem and improper integrals; power series.

MAT21314 Advanced Calculus

Coordinate systems; functions of several variables, parametric representations of curves

and surfaces, transformations of regions; derivatives and directional derivatives; implicit functions, Jacobians and related theorems; extrema; multiple integrals and related theorems.

MAT21320 Software Packages for Mathematics

Mathematical modeling; using some software packages in mathematics and statistics; NETLIB, NAG, Derive, Mathematica, MATLAB, BLAS, Maple, MathCad, SPSS, Minitab.

MAT21321 Numerical Analysis I

Numbers, Binary, Octal and Hexadecimal number systems; floating point arithmetic, Errors, sources and types; solving nonlinear equations, solving systems of linear equations, solving systems of nonlinear equations; approximation and interpolations, numerical integration.

MAT21322 Linear Programming

Problem formulation; graphic solution; simplex method; duality theorem; linear sensitivity analysis and algebraic representation; transportation and assignment problems; network (PERT and CPM); game theory.

MAT21323 Operations Research I

Introduction to operation research; inventory models, queuing models; game theory; Markov chains; case studies.

MAT21341 Linear Algebra II

Vector spaces, linear independence, direct product and direct sum of vector spaces; linear transformations, algebra of linear transformations; dual spaces; matrices, linear systems, eigenvalues and eigenvectors, Hermite matrices, positive definite matrices.

MAT21342 Modern Algebra II

Rings, subrings, ideals, division rings, factor rings; ring homomorphisms; maximal ideals, principal ideal rings, principal ideal domains; polynomial rings, extension of fields.

MAT21343 Number Theory

Divisibility, prime numbers; perfect numbers, congruence; Euler theorem, Fermat's theorem, Wilson's theorem; linear congruence, congruent and noncongruent solutions; Chinese remainder theorem.

MAT21351 History of Mathematics

Mathematical development as science; early numeral systems such as Babylonians, Egyptians and Greek; the three problems of antiquities: duplicating a cube, squaring of a circle and trisecting an angle; Alexandria 1st and 2nd schools, Hindu and Arab mathematics; European mathematics before and after the 17th century; analytic geometry and related concepts; development before calculus and transition to the 20th century.

MAT21361 Principles of General Topology

Topological spaces, basis and subbasis; functions and homomorphisms; separation and countability axioms; connectedness and compactness; Hausdorff space, metric spaces and product spaces.

MAT21362 Modern Methods in Geometry

Euclid's axioms; incidence geometry; Hilbert's postulates; absolute geometry; hyperbolic geometry; Riemann geometry; metric and nonmetric geometric transformations.

MAT21374 Applied Analysis

Orthogonal functions; Fourier series; Fourier transform; Laplace transform; introduction to solving partial differential equations: separation of variables, uses of Fourier and Laplace transform methods.

MAT21399 Scientific Research

Characteristics of scientific thinking and its relationship with scientific research; conducting research on a specific topic in mathematics; deliver and represent this research in a seminar for evaluation.

MAT21403 Ordinary Differential Equations

Solving ordinary differential equations using series; Laplace transform; existence theorem and applications; solving linear and nonlinear systems of ordinary differential equations; dynamical systems.

MAT21414 Functional Analysis

Linear topological spaces, function spaces; weak topology; extension and separation theorems; open mappings; uniform boundedness; Banach and Hilbert spaces.

MAT21421 Numerical Analysis II

Numerical methods for ordinary differential equations and systems; numerical methods for finding the eigenvalues and eigenvectors; numerical methods for solving nonlinear systems, introduction to numerical methods for solving partial differential equations.

MAT21462 Differential Geometry

Curves in the plane and in the space; curvature and torsion; theory of curves: intrinsic equations, involute curves and evolute curves; surfaces, simple surfaces and topological properties; tangent planes; first and second forms of a surface; asymptotes; intrinsic geometry, theory of surfaces; tensors and families of related curves.

MAT21474 Combinatorics & Graph Theory

Graphs: simple graphs, directed graphs, components, connected components; blocks, cut-vertices, and bridges; Euler graphs; trees, planar and nonplanar graphs; graph matrices and coloring.

MAT21481 Special Topics I

Some selected topics in pure and applied mathematics determined by the department and the course lecturer.

MAT21482 Special Topics II

Some selected topics in pure and applied mathematics determined by the department and the course lecturer.

FACULTY MEMBERS

Associate Professors

Mohammed el-Amleh	Ph.D. in Topology, University of Alabama, USA, 1981.
Fawaz Abu Diyak	Ph.D. in Topology, Michigan State University, USA, 1984.
Ali Abdel Muhsen	Ph.D. in Projective Modules, Kent University, USA, 1987.
Mahmoud Al-Masri	Ph.D. in Functional Analysis, University of North Carolina at Chapel Hill, USA, 1985.
Abd Allah Hakawati	Ph.D. in Functional Analysis, Lehigh University, USA, 1984.

Assistant Professors

Mohammed Najib	Ph.D. in Storage Theorem and Dynamics Programming, University of Munich, Germany, 1987.
Subhi Riziyeh	Ph.D. in Applied Mathematics, Clarkson University, USA, 1989.
Jaber Abu Jawkhah	Ph.D. in Algebra & Groups, Middle East Technical University, Turkey, 1990.
Nihaya Awartani	Ph.D. in Mathematical Statistics, American University, USA, 1991.
Mohammed Omran	Ph.D. in Applied Mathematics, Matrices, Linear Algebra, Brigham Young University, U.S.A. 1997.
Samir Matar	Ph.D. in Numerical Analysis, Bronell University, UK, 1991.

Instructors

Zuheir Majjad	M.Sc. in Applied Mathematics, Indiana University, USA, 1981.
Abdel Aziz Hamad	M.Sc. in Abstract Algebra, Middle East Technical University, Turkey, 1980.
Adnan Al-Salqan	M.Sc. in Statistics and Algebra, Ohio University, USA, 1985.

DEPARTMENT OF PHYSICS

The Department of Physics offers, currently, a program leading to B.Sc. in Physics. The students have two choices: a single major in physics or a major in physics coupled with a minor in electronics.

Admission Requirements

After successful completion of freshman year, the science student, with the help of his/her academic advisor, declares his/her major by completing an application form available at the college office.

Department of Physics-Admission Requirements

1. Successful completion of General Physics courses, 22101, 22102, 22107 and 22108, and cumulative average of at least 70% in these courses.
2. Successful completion of General Mathematics 21101 and 21102.
3. Completion, successfully, of at least 30 credit hours, 18 of which should be at least college requirements. In case of competition among potential majors in physics, priority will be given to highest cumulative averages in 22101, 22102, 22107 and 22108.

Undergraduate Requirements for a B.Sc in Physics

To earn a B.Sc in Physics, students must successfully complete 131 hours. These include university, college and department compulsory, and elective courses, in addition to "free" courses.

A. Department compulsory courses: 48 credit

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
22203	General Physics III	3	3	-	22102
22221	Waves and Optics	3	3	-	22203
22213	Physics Lab I	1	-	3	22203
22231	Electronics	3	3	-	22102
22242	Modern Physics I	3	3	-	22102
22241	Thermodynamics & Statistical Physics	3	3	-	22203, 21203 or concurrent with 21203
22233	Electronics Lab I	1	-	3	22231
22313	Physics Lab II	2	-	4	22213
22351	Electricity & Magnetism	2	-	4	22353 or concurrent
22353	Mathematical Physics	3	3	-	21203
22352	Classical Mechanics	3	3	-	21203

22354	Quantum Physics I	3	3	-	22242, 22353
22371	Solid State Physics	3	3	-	22354 or concurrent
22413	Advanced Physics Lab	2	-	5	22371
22451	Electricity & Magnetism II	3	3	-	22351
22454	Quantum Mechanics II	3	3	-	22354
22462	Nuclear Physics	3	3	-	22354
22399	Research	3	3	-	Dept. approval

B. Dept. Electives

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
22301	Computer in Physics	3	3	-	-
22314	Practical Physics	-	-	3	22313
22331	Electronics II	3	3	-	22231
22333	Workshop	1	-	3	Dept. approval
22453	Mathematical Physics II	3	3	-	22353
22356	Theory & Relativity	3	3	-	22242
22361	Atomic & Molecular Physics	3	3	-	22354
22364	Principles of Lasers	3	3	-	22242, 22221
22421	Acoustics	3	3	-	22353
22464	Laser Spectroscopy	3	3	-	22364
22465	Spectroscopy	3	3	-	22354
22452	Classical Mechanics II	3	3	-	22352
22455	Statistical Mechanics	3	3	-	22241 or concurrent with 22354
22457	Plasma Physics	3	3	-	22451
22463	Particle Physics	3	3	-	22462 or concurrent
22471	Solid State	3	3	-	22371

	Physics II				
22481	Special Topics	3	3	-	Dept. approval
22391	Seminar	1	-	-	Dept. approval
22468	Astrophysics	3	3	-	22354 or concurrent
22342	Modern Physics II	3	3	-	22242
22385	Renewable Energy	3	3	-	Dept. approval

C. Compulsory courses from Mathematics Department (6 credit)

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
21201	Calculus III	3	3	-	21102
21203	Differential Equations	3	3	-	21201

Electronics Minor Requirements:

Prerequisites: successful completion of Computer in Physics (22301) in addition to Physics courses: 22231 and 22233.

Admission Requirements in Electronics Minor

- All compulsory courses in Physics Major except Physics 22451, 22454, 22462.
- 27 credits distributed as follows:

Compulsory courses in Electronics Minor (24 cr)

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
26331	Solid State Electronics	3	3	-	-
26341	Digital Electronics	3	3	-	-
26351	Analog Electronic Circuits	3	3	-	26331
26333	Electronics Lab I (Digital-1)	1	-	3	26341
26361	Electrical Measurements	2	2	-	26331, 26341
26343	Electronics Lab II	3	3	-	26351
26441	Digital Electronics II	3	3	-	26341
26443	Computer Techn. Lab I	1	-	4	26333, 26441

26471	Communications	3	-	-	26351
26481	Magnetic Devices	3	-	-	26351
26491	Research	1	1	3	Dept. approval

Elective courses in Electronics Minor (Students choose 3)

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
26472	Microwaves	3	3		Dept. approval
26482	Control Systems	3	3		Dept. approval
26483	Special Topics in Electronics	3	3		Dept. approval
26484	VLSI-Design	3	3		Dept. approval

Course Descriptions

PHY22101 General Physics I

In this course, the following subjects are introduced: vectors, linear and two-dimensional motions, Newton's mechanics, work and energy, linear and angular momenta, gravitation and simple harmonic motion.

PHY22102 General Physics II

This course covers electrical fields and potentials, capacitors, electrical circuits, magnetic field induction, RC and RL circuits, electromagnetic waves, optics, interference and diffraction.

PHY22103 General Physics for Pharmacy

Classical mechanics, electricity, thermodynamics, fluid mechanics, vibrations and wave motion, light and lasers, microscopes.

PHY22105 General Physics I (for College of Educational Sciences)

Students, in this course, learn about vectors, kinematics of one and two dimensional motions, Newton's Laws, linear momentum mechanical energy, work, power, gravitation, thermodynamics and wave motion.

PHY22106 General Physics II (for College of Educational Sciences)

This course covers the following topics: electric charges, electric force, electric field, Gauss's Law, electric potential, capacitance, electric current and resistance, DC circuits

magnetic force, sources of magnetic field, magnetic induction, inductance, ray optics.

PHY22107 Laboratory Practice I

This involves a number of selected experiments in mechanics.

PHY22108 Laboratory Practice II

This includes a number of selected experiments in electricity and magnetism.

PHY22109 General Physics for Agriculture

In this course, students are introduced to one and two-dimensional kinematic motions, Newton's mechanics, work energy and power, linear and angular momenta, gravitation wave motion and laws of thermodynamics.

PHY22110 General Physics Lab. For Agriculture

This lab. covers experiments in mechanics, thermodynamics, electricity.

PHY22113 General Physics lab. for Pharmacy

Mechanics, fluid mechanics, electricity and magnetism.

PHY22203 General Physics III

In this advanced course, students learn about fluids, sound waves, gas laws, heat laws, light laws in diffraction and interference.

PHY22213 Physics Lab I

This lab covers experiments in optics, electricity, magnetism, thermodynamics, and modern physics.

PHY22221 Waves and Optics

This course covers a number of topics: waves and vibrations, diffraction and interference, polarization of light, lasers and masers, holography.

PHY22231 Electronics

In this introductory course, students receive instruction on D.C. circuits analysis, formation of waves, A.C. circuits, semiconductors, diodes and diode circuits, small signal analysis and biasing for bipolar transistors, FET and MOS FET, amplifiers, biasing and types, introduction to digital logic systems, and oscillators.

PHY22233 Electronics Lab.

This lab covers topics taken in Electronics 22231.

PHY22241 Thermodynamics and Statistical Physics

Students, in this course, are introduced to fundamental concepts of thermodynamics, equation of state of gas, expansivity and compressibility, first law of thermodynamics, entropy and second law of thermodynamics, properties of gases, thermodynamics potential, kinetic theory, intermolecular forces, statistical thermodynamics.

PHY22242 Modern Physics

Topics to be studied in this course are special theory of relativity, particle aspects of e-m radiation, wave aspects of material particles, Schrodinger equation in one dimension, nuclear structure, electronics structure of solid materials, atomic structure.

PHY22301 Computer in Physics

Introduction to the computers, hardware & software. Algorithms and flow charts, high level programming language (Basic or fortran or C+), applications of computers in Physics, Internet.

PHY22313 Physics Lab II

This lab covers the following experiments: optics, atomic theory and modern physics.

PHY22314 Physics Lab III

Experiments in this lab cover the following: modern physics, nuclear and atomic physics and light.

PHY22331 Electronics

This course introduces numeral systems, Boolean algebra, logic gates, decoding and arithmetic circuit, practical and logic circuits, flip, flops counters and registers, A/D and D/A convectors.

PHY22333 Workshop

In this workshop, students are expected to build up a physics instrument made from raw materials available.

PHY22351 Electricity and Magnetism

This course focuses on vector analysis, electrostatics, ways of solving electrostatic problems, electric circuits, magnetic properties of matter, magnetic field of static current, Maxwell's equations.

PHY22352 Classical Physics

Topics in this course include coordinate systems, three-dimension motion, supporting axis, central fields, presentation of rotational motion quantity, dynamics of LaGrange's equations and Hamilton's principles.

PHY22353 Mathematical Physics

The course covers vector analysis, coordinate systems, matrices, determinants, complex variables, second-order differential equations legendre functions, special functions (Hermite, Laguere, Beta and Gamma), and an introduction to complex analysis.

PHY22354 Quantum Mechanics

This course begins with a review of concepts of classical mechanics, old quantum theory, fundamental principles of quantum mechanics, quantum mechanics in one and three dimensions, spin angular momentum and approximation methods.

PHY22356 Theory of Relativity

The course dwells on relativistic kinematics, relativistic dynamics, Lorentz-Einstein transformations and the general theory of relativity.

PHY22361 Atomic and Molecular Physics

This course emphasizes Bohr's theory, hydrogen atom, spin angular momentum, transition rates, approximation methods, interaction of atoms with electric and magnetic fields, molecular structure and central approximate field.

PHY22364 Principles of Laser

Emphasis in this course will be on the following topics: interaction of radiation with matter, amplification process (optical) lasers oscillators CU pulsed lasers, light properties of lasers, types of lasers.

PHY22371 Solid State Physics I

Topics introduced in this course include crystal structure, reciprocal lattice, phonons, thermal properties of solids (matters), free electron gas, energy bands, semiconductors, Fermi surfaces and metal super-conductivity.

PHY22399 Research

Students in this course conduct either an experimental or a theoretical research, and then present a findings report. The topic of the research paper is chosen with the help of an academic advisor from the department.

PHY22413 Advanced Physics Lab

In this lab, students conduct advanced experiments covering modern, atomic and nuclear physics.

PHY22421 Acoustics

Transverse waves in a string, longitudinal and transverse vibrations of rods and bars, The vibration of membranes and plates, plane sound waves; reflections and transmission of plane sound waves at plane boundaries, spherical waves and radiation from a piston, architectural acoustics. Noise-its measurement and control, underwater sound, ultrasonic in liquids and solids.

PHY22464 Laser Spectroscopy

Students are introduced to spontaneous and stimulated emissions, atomic spectra broodining of line spectra, non-linear optical processes, spectra resulting from photon absorption, saturated spectroscopy, and Raman spectroscopy.

PHY22451 Electromagnetism

This course tackles Maxwell's equations, electromagnetic induction, propagation of electromagnetic waves, waves in bounded regions, Lorentz transformation in electromagnetic fields.

PHY22452 Classical Mechanics

This course emphasizes LaGranges and Hamilton's equations, small vibrations, motion of solid body, theory of relativity.

PHY22453 Mathematical Physics II

This course is mainly concerned with complex variables, Fourier's series, Fourier's and Laplace's transformations, Group theory, special functions and calculus of variations.

PHY22454 Quantum Mechanics II

Student in this course learn about perturbation theory, approximation methods, scattering theory, non-interacting particles, systems of multi-interacting particles, introduction to relativistic quantum mechanics, and quantum field theory.

PHY22455 Statistical Mechanics

Topics taught in this course include Maxwell's and Boltzman's statistics, Bose-Einstein statistics, Fermi-Dirac statistics, statistical calculation of thermodynamic quantities, applications on statistical thermodynamics, thermodynamic laws, state of equilibrium, temperature and randomness.

PHY22462 Nuclear Physics

Students in this course take a number of topics: nuclear properties, deuteron and nucleon-nucleon interaction, natural radioactivity, stopping potentials and searching for charged particles and objects, accelerators of nuclear particles, alpha and spectroscopies, nuclear models, nuclear fission and fusion, introduction to particle physics.

PHY22465 Spectroscopy

Course topics include different levels (types) of energy, properties of electromagnetic radiation, Mosshauser's effect Raman, spectroscopy, infrared spectroscopy, nuclear magnetic resonance spectroscopy, and vibration spectroscopy, atomic perturbation, spectrum of electrons of diatomic molecules.

PHY22471 Solid State Physics II

This course focuses on superconductivity, plasmas, light properties, magnetic resonance, and noncrystalline solids alloys, point defects, insulators and LCD's, weakness of penetration of magnetic field.

PHY22481 Special Topics

This course covers topics of interest to the instructor, particularly those not covered in other courses.

PHY22491 Seminar

In this one-credit course, a student is required to deliver a presentation on an up-to-date topic in physics selected with instructor's help.

PHY22463 Particle Physics

This course deals with a number of topics: fundamental cosmic forces, detectors, relativistic dynamics, conservation laws, introduction to electromagnetic interactions.

PHY26471 Communication

Fourier transforms and linear system analysis, random signals, autocorrelation functions and power spectral densities analog communication systems, amplitude modulation, single sideband modulation, frequency and phase modulation, digital communication systems, pulse code modulation, phase shift, performance of analog and digital communication systems in the presence of noise, fiber optics.

PHY26491 Projects in Electronics

Consent of the instructor, individual projects on advanced systems in electronics.

PHY26472 Microwaves

Basic concepts, microwave region, decibels, transmission line, coaxial cable, wave guides, reflection coefficient, voltage standing wave ratio, smith chart, power transfer, skin effect, circuit components, terminations, attenuator, coupler, filters, isolator, circulator, detector, mixer, limiter amplifiers, antennas, polarization, beam width, microwave antennas.

PHY26481 Magnetic Instruments

Magnetic field: origin & effects, magnetic field due to electric currents, faraday's Law and induced E.M.Fs, measuring instruments, electric generators & motors, accelerators, teslameters magnetic tapes & disks relays, magnetic resonance & applications (MRI), classification of magnetic substances, mass spectrometers, transformers, TV tubes & CROs.

PHY26482 Control Systems

Mathematical models for control system components transform and time domain methods for linear control systems, stability theory, bode diagram, design specifications in the time and frequency domains, compensation design in the time and frequency domain, data systems, CAD of control systems.

PHY26483 Special Topics in Electronics

Introduction to the fabrication technologies for integrated circuits including oxidation, diffusion, and photolithography, concepts of bipolar and MOS device design, layout of simple digital ICs.

PHY26484 VLSI-Design

Electronic devices fabrication, characteristics, logic and mask design. MOS, CMOS and TTL devices and logic circuits, integrated circuits technology for LSI and VLSI, design rules, problems in system design, VLSI-technology and wafer test.

PHY26331 Solid State Electronics

Semiconductor materials, crystal lattices, growth of semiconductor crystals, energy bands and charge carriers, junctions, fabrication of p-n-Junctions, p-n-Junction diodes, bipolar junction transistors, FET, MOSFET, integrated circuits.

PHY26341 Digital electronics I

Numbers systems, digital computers, digital systems, codes, Boolean algebra, logic gates, combinational logic, with SSI, MSI, and LSI, ROM, PLA memories and RAM, DECODER and Mux.

PHY26351 Analog Electronics Circuits

Transistor circuits, amplifiers, feedback general cascaded systems, RC-coupled amplifiers, darlington current mirrors, class-A-amplifiers, SCR-operation and applications, interface, unijunction transistors, operational amplifiers and applications, RC-filters, practical power supplies, regulators, comparators, timers.

PHY26333 Electronics Lab. I (Digital Lab. I)

Hardware oriented experiments providing practical experience in the design, construction and checkout of components and IC for digital circuits covered in digital Electronics I.

PHY26361 Electrical Instrumentation

Characteristics of resistors, thermistors, varistors, resistor networks for D/A conversion, 2R-Ladder, capacitive and inductive reactance, phasor diagrams, real power, TTL-Circuits, op-amp as a buffer and distributor, analog DC and AC-ammeters, ayrton shunt, capacitance and inductance meters, transducers, voltage doublers, LC-filters, +ve and ve supplies, regulators, D/A and A/D converters.

PHY26343 Electronics Lab. II

Experiments providing practical experience in the construction, design, fault finding for analog circuits covered in Analog Electronics Circuits (36351).

PHY26441 Digital Electronics II

Flip-flops, sequential logic, registers, counters, memory unit, register transfer logic processor logic design, ALU-design, processor unit, accumulator, design of a simple computer.

PHY26443 Computer Technology Lab.

Hardware-oriented experiments providing practical experience in the construction, design and checkout of sequential circuits covered in digital electronics (II) 26441.

FACULTY MEMBERS**Full Professor**

Ghassan Safarini Ph. D. in Experimental Condensed Matter Physics,
Brunel University, London, UK, 1991.

Associate Professors

Subhi Kamel Ph.D. in Atomic Physics,
University of Wisconsin, Madison, USA, 1985

Kamal Rasheed Ph. D. in Atomic Physics,
University of Calgary, Alberta, Canada, 1978.

- Sami Jaber Ph. D. in Theoretical Physics,
Southern Illinois University, Carbondale, USA, 1991.
- Issam Rashid Ph. D. in Condensed Matter Physics,
Ohio University, USA, 1990.
- Salman Salman Ph. D. in High Energy Physics,
New York University, USA, 1982.
- Sharif Musameh Ph. D. in Condensed Physics,
North Carolina State University, USA, 1984.
- Mohammed Abu Jafar Ph. D. in Computational Condensed Matter Physics,
Southern Illinois University, Carbondale, USA, 1991.
- Muneer Abdoh Ph. D. in Crystal Structure,
University of Mysore, India, 1982.
- Assistant Professors**
- Hussein 'Ilayan Ph. D. in Electronic Engineering,
Maryland University, USA, 1986.
- Musa El-Hasan Ph. D. in Solid State Physics, (Computation)
Middle East Technical University, Turkey, 1987.
- Mohammed Y. Suh Ph. D. in Mossbauer Effect,
The Hebrew University of Jerusalem, Jerusalem, 1982.
- Zeid Qamhie Ph. D. in Atomic and Nuclear Physics,
Katholieke Universiteit Leuven (KULL), Belgium, 1994.
- Lecturers**
- Ribhi al-Haj Hamad, M. Sc. in Solid State Physics,
Middle East Technical University, Turkey, 1983.
- Instructors**
- Abdel Rahman Qamheih, M. Sc. in Electronics Engineering,
University of Wales, Cardiff, UK, 1983.
- Mohammed Walid Salah M. Sc. in Nuclear Engineering,
Istanbul Technical University, Istanbul, Turkey, 1981.

DEPARTMENT OF CHEMISTRY

Department Admission Requirements

After successful completion of freshman year in the College of Science, the student submits an application to the college. He/she obtains acceptance upon meeting the following conditions:

1. Successful completion of General Chemistry courses 23101, 23107, 23108 and cumulative average of at least 70% in each of the three courses.
2. Successful completion of Calculus 21101, Physics 22101 and 22107.
3. Completion, successfully, of at least 30 credits, of which 18 credits are requirements.

Priority of acceptance in the department, in case of competition among potential majors, will be given to those obtaining highest cumulative averages in Chemistry 23101, 23102, 23107 and 23108.

Requirements for a B.Sc in Chemistry

All students wishing to get a B.Sc in Chemistry must complete 131 credits. These include university, college and department compulsory, and elective courses, as well as "free" courses.

Dept. of Chemistry Requirements: Compulsory courses (51 credits)

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
21201	Calculus III	3	3	-	21102
21203	Principles of Differential Equations	3	3	-	21201
23211	Analytical Chemistry	3	3	-	23102, 23108
23215	Practical Analytical Chemistry	1	-	4	23211 or concurrent
23231	Organic Chemistry I	3	3	-	23102, 23108
23232	Organic Chemistry II	3	3	-	23231
23235	Practical Organic Chemistry	2	1	4	23231
23241	Physical Chemistry I	3	3	-	23102, 23108, 21201 or concurrent
23311	Instrumental	2	3	-	23211,

	Analysis				23215
23315	Practical Instrumental Analysis	1	-	4	23311 or concurrent
23321	Inorganic Chemistry I-	3	3	-	23241 or concurrent
23322	Inorganic Chemistry II	3	3	-	23321
23325	Practical Inorganic Chemistry	2	1	4	23322 or concurrent
23331	Organic Chemistry III	3	3	-	23232
23335	Practical Organic Chemistry II	2	1	4	23235, 3331 or concurrent
23341	Physical Chemistry II	3	3	-	23241
23342	Physical Chemistry III	3	3	-	23321, 21203
23345	Practical Physical Chemistry I	1	-	4	23341 or concurrent
23346	Practical Physical Chemistry II	1	-	4	23345
23392	Chemistry Research I	3	2	4	Junior
23432	Analytical Organic Chemistry	3	2	4	23331, 23335
	Total	51			

Elective courses (A Chemistry major selects 21 credits from the following course list)

Course #	Course title	Cr hrs	Classes	Lab	Prerequisite
23401	Computer in Chemistry	3	2	4	Seniors
23411	Advanced Analytical Chemistry	3	3	-	23311

23415	Advanced Practical Analytical Chemistry	1	-	4	23315, 23411 or concurrent
23421	Advanced Inorganic Chemistry	3	3	-	23322
23425	Advanced Practical Inorganic Chemistry	1	-	4	23325
23435	Organic Synthesis	2	1	4	23331, 2335
23431	Advanced Organic Chemistry	3	3	-	23331
23441	Advanced Physical Chemistry	3	3	-	23341
23445	Advanced Practical Physical Chemistry	1	-	4	23346
23461	Industrial Chemistry	3	3	-	Seniors
23464	Polymer Chemistry	3	3	-	23331
23471	Applied Chemistry	3	3	-	Seniors
23481	Special Topics in Analytical Chemistry	3	3	-	Dept. approval
23482	Special Topics in Inorganic Chemistry	3	3	-	Dept. approval
23483	Special Topics in Organic Chemistry	3	3	-	Dept. approval
23484	Special Topics in Physical Chemistry	3	3	-	Dept. approval
23492	Research II	3	-	12	23392

23332	Biochemistry	4	3	3	23232, 23235
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Course descriptions

CHM23211 Analytical Chemistry

This course mainly deals with the study of basic principles of analytical chemistry, statistical methods in chemistry, traditional/classical analytical methods such as volumetric and gravimetric analysis, chemical equilibrium, titrimetry and redox (Oxidation-Reduction) theory.

CHM23215 Practical Analytical Chemistry

This lab work focuses on experiments appropriate to Chemistry 23211. It particularly focuses on quantitative chemical analysis.

CHM23231 Organic Chemistry I

This course is a study of chemical properties of non-cyclic compounds. It also illustrates the nature of common links in particles. It is also a study of general reactions, and stereochemistry for these compounds.

CHM23232 Organic Chemistry II

This course covers several topics: cyclic, non-aromatic and aromatic compounds, chemical reactions displacement of different types, reaction mechanisms, different-types of analytical methods to determine bi-synthesis of compounds.

CHM23233 Organic Chemistry (for Biology and Medical Lab Sciences majors)

The course starts with an introduction to organic chemistry, study of properties and reactions of some organic compounds: carbohydrates, aromatic compounds and some functional groups: alcohols, organic acids, amines acids, hetero cyclic compounds and phenols.

CHM23235 Practical Organic Chemistry I

Practical experiments are designed to cover theoretical fundamentals, techniques in synthesis, separation, primary identification of organic compounds of these syntheses: dehydration of water from alcohol, some addition and displacement reactions. Some theoretical instruction precedes the conduction of the experiments step by step.

CHM23237 Practical Organic Chemistry (for Biology and Medical Lab Sciences majors)

Practical experiments designed cover theoretical fundamentals and include knowledge of techniques used in syntheses, separation and preliminary familiarity with organic compounds. These syntheses include removal of water from alcohols, addition and displacement reactions. Before conducting the experiments, step by step, the instructor provides some theoretical explanation of these steps.

CHM23241 Physical Chemistry I

This course is a study of gas properties, kinetic theory of gases, thermodynamics of chemistry, applications of dynamics chemistry in the study of solutions, chemical equilibrium and fluid properties.

CHM23311 Instrumental Analytical Chemistry

This course is a practical exercise as well a theoretical explanation of different instrumental quantitative analytical methods such as chromatography, polarography, PH-metry, electrochemistry, conductometry, refractometry and coulometry.

CHM23315 Practical Instrumental Analysis

This lab course includes experiments directly related to Chemistry 23311. Students learn the hows of using instruments in quantitative analysis.

CHM23321 Inorganic Chemistry I

In this course, students receive instruction on fundamentals of inorganic chemistry. The course starts with an introduction about atomic structure and detailed study of periodicity, chemical bonds and molecular shapes. The course then proceeds to solid state chemistry, as well as acid/base chemistry.

CHM23322 Inorganic Chemistry II

In this course, students learn about chemistry in organic solvents. This is also a detailed study of complex inorganic coordination compounds in terms of theories explaining bonds existing inside them. There is also an emphasis on their reactivity, and dynamics course of their reactivity. The course ends with some chemical description of transitional elements and an introduction to inorganic metal elements.

CHM23325 Practical Inorganic Chemistry

This course consists of three different sets of experiments: the first set is pertinent to chemical description (characterization) techniques of chemical properties of some elements like metal. The second set involves the study of some chemical reactivity. The third set has to do with synthesis of some complex compounds including their isomerism methods.

CHM23331 Organic Chemistry III

This course consists of some selected topics excluded in Chemistry 23231 and 23232. The course mainly deals with special functional groups such as organic acids and their derivatives, heterocyclic compounds, amines, phenols, polycyclic aromatic compounds, carboxylic ionic reactivity and mechanistic aspects of some of these reactivities.

CHM23335 Practical Organic Chemistry II

This course is a continuation of Chemistry 23235. Experiments and syntheses in this course depend on the basic chemical syntheses such as Grignard, Freidel Craft and Sand-Meyer techniques (reaction). This will be in addition to condensation, oxidation and displacement reactions.

CHM23341 Physical Chemistry II

This course, a continuation of Physical Chemistry I CHM23241, focuses on chemical equilibrium, surface chemistry, solid state chemistry, colloids, electrochemistry and chemical reaction kinetics.

CHM23342 Physical Chemistry III

This course introduces major principles in classical mechanics. It also explains postulates and theorems of quantum mechanics, exact solution of Shrodinger equation of some systems such as harmonic vibration, hydrogen atom, particle in space and in circle.

CHM23345 Practical Physical Chemistry I

In this lab course, students will conduct a set of experiments related to physical chemistry and thermodynamics.

CHM23392 Research I

This course aims at training the student on how to conduct research. This includes how to use the library, how to plan and write the research, how to collect data. After the theoretical background, the students are expected to write a research proposal under the supervision of a department faculty member.

CHM23432 Analytical Organic Chemistry

In this course, students receive instruction on chemical bases for both quantitative and qualitative analysis to identify organic compounds: mixed or pure form. Students also learn about functional groups and their derivatives, spectroscopic analytical methods. The course is important in deductive teaching of organic chemistry fundamentals.

CHM23401 Computer in Chemistry

This elective course (theoretical and applied) aims at teaching students to write up programs (Basic and Fortran) relevant to chemical problems. Students also learn how to use available programs in solving chemical problems namely quantum mechanics and molecular spectroscopy.

CHM23411 Advanced Analytical Chemistry

This course is a study of some advanced instrumental methods in chemical analysis. These methods include different types of chromatography, nuclear magnetic resonance, infrared spectroscopy, X-Ray spectroscopy and thermochemical analytical techniques

CHM23415 Advanced Practical Analytical Chemistry

This practical course includes a number of advanced experiments of instrumental analysis. Examples of these experiments are gas chromatography, polarography, atomic spectroscopy and other techniques.

CHM23421 Advanced Inorganic Chemistry

Students, in this course, take advanced topics in non-organics chemistry: organic metallic chemistry and homogenous catalysis, solid state chemistry, molecular symmetry, point groups and molecular spectroscopy.

CHM23425 Advanced Practical Inorganic Chemistry

This advanced practical course includes synthesis and definition of some inorganic compounds. In the analysis of these compounds, some modern instrumental techniques are used.

CHM23431 Advanced Organic Chemistry

This course covers a number of advanced topics in organic chemistry. These topics include Arylhalide Chloride, alpha, beta, unsaturated carbonyl compounds, orbital symmetry, neighboring group effects, heterocyclic compounds, lipids, carbohydrates, amino acids and proteins.

CHM23435 Organic Synthesis

This lecture and lab course is devoted to synthesis of some organic compounds, the hows of protecting functional groups during synthesis and the hows of setting up a plan for the synthesis of these compounds.

CHM23441 Advanced Physical Chemistry

This course includes several advanced topics in physical chemistry such as chemical equilibrium in gas groups, chemical potential, excess functions, gas release, free energy function, molar, Gibb's functions, fugacity, and other thermodynamic aspects of gases.

CHM23445 Advanced Practical Physical Chemistry

In this practical course, students are expected to conduct advanced experiments in physical chemistry pertinent to quantum chemistry, surface chemistry, spectroscopy phase diagrams, colloid chemistry and catalysis.

CHM23461 Industrial Chemistry

This course introduces students to high tech. chemical industry processes. Students will get an idea about chemical reactors, important equipment, industrial operations used in production and technology and their planning in various aspects, namely petrochemicals, plastics, detergents, dyes, agricultural chemicals, and medicines... The course emphasizes common technological foundations.

CHM23464 Polymer Chemistry

This course is an introduction to the nature of polymer sciences, and synthesis techniques. Students also learn about polymerization process. Examples of important polymers used in industry are rubber and plastics. Students learn also about their physical properties. Emphasis is given to relationship between structure and properties. In these respects, a comparison is held between systematic stereo crystallized polymer and others.

CHM23471 Applied Chemistry

This course highlights the relationship between chemistry and society. Topics covered include environmental chemistry, pollution, pharmaceutical and medicinal chemistry, biochemistry and geochemistry.

CHM23484, CHM23483, CHM23482, CHM23481 Special Topics in Chemistry

These theoretical-oriented courses cover different advanced topics in analytical inorganic, organic and physical chemistry respectively.

CHM23492 Research II

In this course, a student is expected to spend ten hours of work per week on a research proposal which he/she develops under the direct supervision of a faculty member. This course aims at training students to depend on themselves in the future, especially if they plan to continue their education.

CHM23332 Biochemistry

This course is a study of chemical compounds and their representation in the various organs of the body: proteins, and enzymatic catalysis.

DEPARTMENT OF APPLIED CHEMISTRY

B.Sc. Program in Applied Chemistry Admission Requirements

1. Successful completion of General Chemistry courses CHM23101, 23102, 23107, 23108 and 23106 with cumulative average of at least 70% in each of all these courses.
 2. Successful completion of Calculus 21101 and Physics 22101 and 22107.
 3. Completion, successfully, of at least 33 credits (25% of requirements for B.Sc. degree).
- If the number of students wishing to major in Applied Chemistry is higher than the number approved by the College Council, then the students will accepted according to their averages in Chemistry CHM23101, 23107, 23102 and 23108.

Undergraduate Requirements

To obtain a B.Sc. in Applied Chemistry, a student has to successfully complete 131 credits.

These include university, college, department compulsory, elective courses, as well as "free" courses.

A. Department compulsory courses in Applied Chemistry (54 credits)

Course #	Course title	Cr hrs	Prerequisite
21201	Calculus III	3	21102
23211	Analytical Chemistry	3	23102, 23108 or concurrent
23215	Practical Analytical Chemistry	1	23108, 23211 or concurrent
23231	Organic Chemistry I	3	23102, 23108 or concurrent
23325	Practical Organic Chemistry	2	23231
23241	Practical Inorganic Chemistry	3	23241 or concurrent
23345	Physical Chemistry I	2	23231
23311	Practical Physical Chemistry	3	23102,(23108, 21202 or concurrent)
23315	Instrumental Analysis	1	23241
23335	Practical Instrumental	2	23211, 23215 or concurrent

	Analysis		
23232	Organic Chemistry II	1	23311 or concurrent
23341	Practical Organic Chemistry II	3	23231
23346	Inorganic Chemistry II	2	23235, 23232
23331	Physical Chemistry II	3	23321
23432	Practical Physical Chemistry II	1	23241
23461	Organic Chemistry III	3	23345, 23341
23471	Analytical Organic Chemistry	3	23232
23360	Industrial Chemistry	3	23331, 23335
23201	Applied Chemistry	3	23232, 23241
23301	Practical Training	3	23232, 23321
21201	Industrial Economics	1	Dept. approval
23211	Planning & Management of Production Operations	2	-
23215	Calculus III	3	-

B. Department elective courses in Applied Chemistry (18 credits)

Course #	Course title	Cr hrs	Prerequisite
23361	Introduction to Chemical Engineering	1	-
23365	Chemical Operations Lab	2	23235, 23215
23464	Chemistry of Polymerized Materials	3	23331
23462	Analytical Industrial Chemistry	3	23311
23433	Technology of Organic Chemistry	3	Seniors
23463	Industrial Catalysis	2	23322
23332	Biochemistry	4	23232, 23235
23333	Petrochemicals	3	23331
23467	Polymer	3	23464

	Technology		
23468	Industrial Pharmacology	3	23235, 23241, 23461
23312	Chemical Pollution and Industrial Safety	3	23311
23433	Food Industry Chemistry	2	23432, 23311, 23332

Course descriptions

CHM23211 Analytical Chemistry

This course mainly deals with the study of basic principles of analytical chemistry, statistical methods in chemistry, traditional/classical analytical methods such as volumetric and gravimetric analysis, chemical equilibrium, titrimetry and redox (Oxidation-Reduction) theory.

CHM23215 Practical Analytical Chemistry

This lab work focuses on experiments appropriate to Chemistry 23211. It particularly focuses on quantitative chemical analysis.

CHM23231 Organic Chemistry I

This course is a study of chemical properties of non-cyclic compounds. It also illustrates the nature of common links in particles. It is also a study of general reactions, and stereochemistry for these compounds.

CHM23232 Organic Chemistry II

This course covers several topics: cyclic, non-aromatic and aromatic compounds, chemical reactions displacement of different types, reaction mechanisms, different-types of analytical methods to determine bi-synthesis of compounds.

CHM23233 Organic Chemistry (for Biology and Medical Lab Sciences majors)

The course starts with an introduction to organic chemistry, study of properties and reactions of some organic compounds: carbohydrates, aromatic compounds and some functional groups: alcohols, organic acids, amines acids, hetaera cyclic compounds and phenols.

CHM23235 Practical Organic Chemistry I

Practical experiments are designed to cover theoretical fundamentals, techniques in synthesis, separation, primary identification of organic compounds of these syntheses: dehydration of water from alcohol, some addition and displacement reactions. Some theoretical instruction precedes the conduction of the experiments step by step.

CHM23237 Practical Organic Chemistry (for Biology and Medical Lab Sciences majors)

Practical experiments designed cover theoretical fundamentals and include knowledge of techniques used in syntheses, separation and preliminary familiarity with organic compounds. These syntheses include removal of water from alcohols, addition and displacement reactions. Before conducting the experiments, step by step, the instructor provides some theoretical explanation of these steps.

CHM23241 Physical Chemistry I

This course is a study of gas properties, kinetic theory of gases, thermodynamics of chemistry, applications of dynamics chemistry in the study of solutions, chemical equilibrium and fluid properties.

CHM23311 Instrumental Analytical Chemistry

This course is a practical exercise as well as a theoretical explanation of different instrumental quantitative analytical methods such as chromatography, polarography, PH-metry, electrochemistry, conductometry, refractometry and coulometry.

CHM23315 Practical Instrumental Analysis

This lab course includes experiments directly related to Chemistry 23311. Students learn the hows of using instruments in quantitative analysis.

CHM23321 Inorganic Chemistry I

In this course, students receive instruction on fundamentals of inorganic chemistry. The course starts with an introduction about atomic structure and detailed study of periodicity, chemical bonds and molecular shapes. The course then proceeds to solid state chemistry, as well as acid/base chemistry.

CHM23361 Introduction to Chemical Engineering

This course covers the basic principles pertinent to solutions to chemical engineering industrial problems, as well as to basic computer software as applied to chemistry. The course also focuses on mass and energy, and other related subjects, especially degree of productivity, efficiency and transformation.

CHM23365 Chemical Operations Lab

This course is a study of important industrial materials and their synthesis. These include soap, industrial detergents, shampoo, creams, plastics, dyestuffs, etc.

CHM23301 Planning and Management of Production Operations

This course introduces methods of practical work used in planning production, management of warehouses, and goods under production with lowest costs possible.

CHM23201 Industrial Economics

In this course, students receive instruction on principles of economics applied on chemical industry, economic feasibility studies of projects, market research, design, and cost and evaluation. This is in addition to ways of calculating costs of production and their classification.

CHM23360 Practical Training

In this course, each student is expected to serve eight weeks in an industrial firm or in any institution concerned with the chemical field. Upon completion, the student must submit a report detailing his/her service.

CHM23433 Technology of Organic and Inorganic Chemistry

This course covers a number of topics: manufacturing processes based on methane, ethylene, propylene, C-4 hydrocarbons, benzene, toluene, xylene, coal, fat, oils and carbohydrates. In addition, the course focuses on industrial processes used to produce acids (sulfuric acids), amino acids, soda, phosphates, industrial gases, glassware, pottery, and alkaline salts.

CHM23462 Analytical Industrial Chemistry

Students in this course are introduced to sampling theory, quality control according to international standards, organizational requirements, samples analysis, refining, and the most important instrumental means of industrial analysis.

CHM23322 Industrial Catalysis

This course emphasizes theory and applications of catalysts in important organic and inorganic operations. This course also focuses on heterogeneous catalysts.

CHM23332 Biochemistry

This course is a study of chemical compounds and their representation inside the different parts of the body.

CHM23333 Petrochemicals

This course aims at teaching students about the processes of oil refining. It also focuses on chemical transformation, production of petrochemical products and their transformations.

CHM23467 Polymer Technology

Topics covered in this course include ways of making polymers such as moulding, blowing, calendering, casting, extrusion, foaming, coloring, filling with additives.

CHM23468 Industrial Pharmacology

In this course, students learn about the principles of pharmaceutical industry, forms of pharmaceutical dosages, good production performance, design of pharmaceutical dosages, manufacturing and packaging products.

CHM23312 Chemical Pollution and Industrial Safety

This course covers several topics: sources of chemical pollution in water and air, causes of this pollution, pesticides, industrial detergents, polymers causing pollution, methods of pollution-monitoring, methods of treatment of radiating and chemical waste, safety in labs, and chemical projects on poisonous materials.

CHM23433 Food Industry Chemistry

Topics covered in this course are raw materials, major food industries, methods followed in producing foodstuff, storage and manufacturing food, additives, such as flavoring, preservatives, coloring and sweetening materials. In addition, the course focuses on food analysis by using modern techniques.

FACULTY MEMBERS

Full Professors

Ali Zeidan Abu Zuhri	Ph.D. in Analytical Chemistry, Assuit University, Egypt, 1976.
Radi Daoud	Ph.D. in Analytical Chemistry, Strathclyde University, UK, 1977.
Hikmat Hilal	Ph.D. in Inorganic Chemistry, University of Manchester, UK, 1980.
Bassim Shraydeh	Ph.D. in Physical Chemistry, University of Wales, UK, 1980.
Maher An-Natsheh	Ph.D. in Physical Chemistry, University of Manchester, UK, 1983.

Associate Professors

Fu'ad Mahmoud	Ph.D. in Organic Chemistry, University of Sussex, UK, 1979.
Shukri Khalaf	Ph.D. in Physical Chemistry, University of Manchester, UK, 1982
Nidal Za'tar	Ph.D. in Analytical Chemistry, University of Kent, UK, 1983.
Mohammed Noori	Ph.D. in Organic Chemistry, University of New York, Buffalo, N.Y., USA, 1983.
Mohammed Subu'	Ph.D. in Inorganic Chemistry, University of Florida, USA, 1984.
Waheed Jondi	Ph.D. in Organic Chemistry, University of Manchester, UK, 1990.
Taleb at-Tal	Ph.D. in Organic Chemistry, Tubingen University, Germany, 1995.

Assistant Professors

Samar al-Shakhsheer	Ph.D. in Analytical Inorganic Chemistry, University of Oklahoma, USA, 1995.
Nizar Mattar	Ph.D. in Organic Chemistry of Polymers, University of Bradford, UK, 1984.

Lecturers

Ismat Shakhsheer	M.Sc. in Organic Chemistry of Polymers, University of Lancaster, UK, 1980.
Ahmad Abu Obeid	M.Sc. in Physical Chemistry,

Middle East Technical University, Turkey, 1984.

Instructors

Sayel Jarrar

M.Sc. in Organic Chemistry,
University of Munich, Germany, 1971.

Kamel Abdel Hadi

M.Sc. in Theoretical Chemistry,
Southern Illinois University at Carbondale, USA, 1986.

Nisreen al-Masri

M.Sc. in Analytical Chemistry,
University of the Pacific, USA, 1988.

Hala Arafat

M.Sc. in Chemistry,
An-Najah National University, Nablus, Palestine, 1999.

DEPARTMENT OF BIOLOGICAL SCIENCES

Bachelor of Science in Biology major and minor in Biotechnology (B.Sc.)

Introduction

The Department of Biological Sciences was established in 1977. It offers undergraduates a practical knowledge on living matter at the cellular organism and population levels. Fundamental subjects such as cell biology, genetics, physiology, microbiology, biochemistry, and ecology are supplemented by a wide variety of elective topics, which will specifically prepare students for future careers in teaching, research, and for applied work in industry, agriculture and public health.

In addition, the Biology Department is currently developing a B.Sc biotechnology program as a minor specialty to be launched in the near future. In this program, the students will learn basic and applied biotechnology techniques including recombinant DNA technology, biochemistry, molecular biology, genetic engineering, enzyme and protein production, industrial production of pharmaceutical products. This program is very important, for it prepares the students to apply different biotechnology techniques in medicine, agriculture, immunology, pharmacy and others.

Besides offering B.Sc. degrees in biology and biotechnology, the Biology Department has highly qualified manpower capable of performing research and preparing students for an M.Sc. degree in different biological aspects.

Admission requirements

To be admitted to the program, the student must fulfill the following requirements:

1. Pass all General Biology courses (24101, 24107, 24102, 24108) with accumulative grade average not less than 70%.
2. Pass General Chemistry courses (General Chemistry 23101, 23107, 23102, 23108)

In case of competition among applicants, priority of admission will be selected according to their academic standings.

Graduation Requirements:

To get a B.Sc. degree in Biological Sciences, the student must successfully complete 131 credit hours. These include university requirement compulsory courses, university requirement elective courses, college requirement courses and department requirement courses. The department requirement courses are shown below.

Biology Comulsory Courses: 41 credits

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
24255	Botany	4	3	3	24102,24108
24421	Histology	3	2	3	24264
24264	Zoology	4	3	3	24102,24108
24231	Genetics	4	3	3	24102,24108

24311	Biochemistry	4	3	3	23233
24321	Cell Biology	3	3	-	24102,24108
24371	Principles of Ecology	3	2	3	24102,24108
24341	Microbiology	4	3	3	24102,24108
24351	Plant Physiology	4	3	3	24255
24361	Animal Physiology	4	3	3	24264
24499	Research Project	3	1	6	D.A
24491	Seminar	1	-	-	D.A

Chemistry Compulsory Courses: 9 credits

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
23233	Organic Chemistry	3	3	-	23102,23108
23237	Practical Organic Chemistry	2	-	4	23233
23212	Analytical Chemistry	3	3	-	23102,23108
23216	Practical Analytical Chemistry	1	-	3	23212, 23108

Biotechnology Compulsory Courses: 22 credits

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
24322	Cell Culture Theory and Application	3	1	6	24321, 24341
	Molecular Biology	3	3	-	24321,24231
24392	Techniques in Molecular Biology	2	-	6	24392
24393	Protein Purification	2	-	6	24311

24413	Applied Biotechnology I	3	2	3	24393
24494	Development Biology	3	2	3	24264, 24392
24405	Applied Biotechnology -II	3	2	3	24393
24498	Recombinant DNA Technology	3	1	6	24393

Elective Courses: 9 Credits

The 9 elective credits may be selected from a wide variety of courses listed. This flexibility allows students to take extensive course work in one particular area of specialization or sample courses in a variety of areas.

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
24222	Micro technique	3	1	6	24102,24108 D.A.
24256	Non-Vascular Plants	3	2	3	24255
24314	Biochemistry of Metabolism	3	3	-	24311
24346	Fermentation Industry	3	3	-	24341
24363	Medical Parasitology	3	2	3	24102,24108
24257	Vascular Plants	3	2	3	24255
24268	Vertebrates	3	2	3	24264
24267	Invertebrates	3	2	3	24264
24444	Virology	3	3	-	24341
24441	Medical Mycology	3	2	3	24341
24497	Biotechnology in Biological Control	3	-	3	24493
24481	Special Top- ics	3	3	-	-
25202	Biostatistics	3	3	-	-

Biological and Biotechnology courses for major and minors

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
24255	Botany	4	3	3	24102,24108
24264	Zoology	4	3	3	24102,24108
24231	Genetics	4	3	3	24102,24108
24311	Biochemistry	4	3	3	23233
24321	Cell Biology	3	3	-	24102,24108
24331	Principles of Ecology	3	2	3	24102,24108
24341	Microbiology	4	3	3	24102,24108
24351	Plant physiology	4	3	3	24255
24361	Animal Physiology	4	3	3	24264
24499	Research Project	3	1	6	D.A
24491	Seminar	1	-	-	D.A

DA = Department Approval

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
24233	Biostatistics	3	3	-	-
23212	Analytical Chemistry	3	3	-	23102,23108
23216	Practical Analytical Chemistry	1	-	3	23102,23108
23233	Organic Chemistry	3	3	-	23102,23108
23237	Practical Organic Chemistry	2	1	3	23233
24322	Cell Culture Theory and Application	3	1	6	24321, 24341
24392	Molecular Biology	3	3	-	24321,24231
24393	Techniques in	2	-	6	24392

	Molecular Biology				
24413	Protein Purification	2	-	6	24311
24494	Applied Biotechnology I	3	2	3	24393
24405	Development Biology	3	2	3	24264, 24392
24222	Micro Technique	3	1	6	24102,24108
24256	Non-Vascular Plants	3	2	3	24255
24421	Histology	3	2	3	24264
24314	Biochemistry of Metabolism	3	3	-	24311
24346	Fermentation Industry	3	3	-	24341
24363	Medical Parasitology	3	2	3	24102,24108
24257	Vascular Plants	3	2	3	24255
24268	Vertebrates	3	2	3	24264
24267	Invertebrates	3	2	3	24264
24444	Virology	3	3	-	24341
24441	Medical Mycology	3	2	3	24341
24497	Biotechnology in Biological Control	3	-	3	24493
24481	Special Topics	3	3	-	-
24498	Applied Biotechnology -II	3	2	3	24393
24490	Recombinant DNA Technology	3	1	6	24393

Course descriptions:

BIO24101 General Biology I

A discussion of biological activity at the level of the cell. Cell structure. Chemical constituents, architecture, material exchange with the environment, the role of the cell

membrane. Major energy generating biochemical pathways, cellular respiration, photosynthesis and control of cellular activities.

BIO24102 General Biology II

A discussion of biological activity at the level of organism. Structure and function of body parts. Response of the organism to its biological and physical environment. Biological rhythms, behaviors, basic concepts in genetics and the process of evolution.

BIO24107 Laboratory Experiment in General Biology I

The course includes scientific background and practical procedures for the various experiments on different biological principles discussed in BIO 24101.

BIO24108 Laboratory Experiment in General Biology II

The course includes scientific background and practical procedures for the various experiment on different biological principles discussed in course no. 24102

BIO24222 Microtechnique

Various techniques used for slide preparation and staining of plant

BIO24255 Botany

General biological principles with emphasis on growth, reproduction, structure, and functions of plants; morphological studies of typical plants.

BIO24256 Non-Vascular Plants

A study of the morphology, reproduction and habitats of the non-vascular plants with emphasis on classification and the evaluation of major phyla.

BIO24264 ZOOLOGY

This course is a survey of the animal kingdom with an emphasis on its history and organization. Particular attention is paid to special structures and mechanisms evolved by selected representatives of major phyla for solving problems of life in various environments.

BIO24231 Genetics

This entry level course presents the principles and experimental evidence leading to our understanding of the gene concept and the role of DNA as genetic material. Patterns of inheritance, the relationship between genotype and phenotype, and transmission, coding, and expression of genetic information are considered in a variety of organisms. A quantitative, problem-solving approach and the use of genetic analysis as a tool to study biological phenomena are emphasized throughout the course.

BIO24371 Principles of Ecology

Introduction to fundamentals of ecology. Principles relating to populations, communities and ecosystems. Particular emphasis placed on the many dimensions of interdependence within ecosystems. (FA,SP)

BIO24421 Histology

study of the basic types of tissues and organs at the microscopic level. structure and associated function are emphasized. The laboratory concentrates on the light microscopic study of tissues and offers students the opportunity to perform basic histological techniques.

BIO24311 Biochemistry

Basic discussion of the structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and function and introduction to bioenergetics.

BIO24314 Biochemistry of Metabolism

Organization of carbohydrates, fatty acids and amino acids. Anabolism and catabolism of nucleotides. Biochemistry of hormonal transport and their effects on metabolism.

BIO24321 Cell Biology

Structure and function of cells and organelles, including membrane structure and transport; biogenetics of mitochondria and chloroplasts; cell motility; DNA replication; protein synthesis and transport; mitosis; meiosis; cytokinesis; laboratory techniques including gel electrophoresis; phase-contrast microscopy; spectrophotometry; respirometry; radioisotope analysis; cell culture; chromosome banding; bacterial DNA transformation.

BIO24322 Cell culture theory and application

Principles of plant and animal tissue and organ culture techniques to study these tissues structurally, biologically and physiologically. Laboratory experience is gained in culturing techniques and preparation of culture media.

BIO24341 Microbiology

Morphology, physiology, classification, and cultivation of bacteria and viruses, with introduction to microbial genetics, pathogenesis, and immunology.

BIO24346 Fermentation Industry

Focuses on biological (especially microbiological) systems by which materials and energy can be interconverted (e.g., waste products into useful chemicals or fuels, antibiotic production). Manipulation of microorganisms capable of producing high value industrial substances

BIO24363 Medical Parasitology

Major parasitic diseases of humans, important features of the etiologic agents as well as the epidemiology, transmission, mechanisms of pathogenesis and diagnosis

BIO24351 Plant Physiology

Plant-soil-water relations, transport, mineral nutrition, plant biochemistry, and the environmental and hormonal control of plant growth and development.

BIO24257 Vascular Plants

Survey of major groups with emphasis on identification, classification, and phylogeny of flowering plants.

BIO24361 Animal Physiology

The functions of the major tissue types and organ systems of multicellular animals will be discussed, with emphasis on human physiology in health and disease. The use of invertebrate and vertebrate animal models in research, and comparisons of functional adaptations in non-human systems will also be covered.

BIO24268 Vertebrates

Structure and evolutionary relationships of vertebrates.

BIO24267 Invertebrate Zoology

Structure, function, classification, and life history of major groups of invertebrate animals (exclusive of insects and parasitic vertebrates). 2 hrs lec, 4 hrs lab per wk. Prereq: 101 or 160.

BIO24392 Molecular Biology

Study of gene structure, function and control at the molecular level. Molecular techniques used to analyze nucleic acid and protein activity and diversity.

BIO24405 Developmental Biology

A detailed survey of the processes of animal development, including fertilization, cleavage, gastrulation, and organogenesis. These processes are examined in the context of concepts such as differentiation, determination, induction, intercellular signaling, morphogenesis, and pattern formation. Emphasis is placed on current techniques for studying development, such as genetic analysis of mutations, recombinant DNA technology, molecular probing of gene expression, and gene transfer. The experimental focus is on model organisms such as nematodes, fruit flies, frogs, and mice.

BIO24413 Protein Purification

A laboratory course in protein purification techniques

BIO24444 Virology

Current topics related to the molecular/cell biology of viral structure, function, and evolution. Particular emphasis is placed on pathological mechanisms of various human disorders, especially emerging diseases, and the use of viruses in research.

BIO24441 Medical Mycology

Classification and diagnosis of medically important fungi

BIO24491 Seminar

Studies and discussions of biological problems.

BIO24490 Recombinant DNA Technology

This course presents the fundamental aspects of techniques for DNA cloning, including gene engineering and introduction into host cells, isolating a gene from a cellular chromosome, detection of specific DNA sequence, DNA sequencing. Polymerase chain reaction: an alternative to cloning will be included.

BIO24393 Techniques in Molecular Biology

Laboratory to apply molecular techniques to investigate a variety of biological questions. Techniques include cloning, DNA/Protein fingerprinting, RFLP, Blotting, PCR, and DNA sequencing.

BIO24494 Applied Biotechnology I

This course will focus on the cloning procedures used for a variety of eukaryotic cells. An overview of the possibilities where biotechnology may play important role in producing vital compounds with medical applications, such as enzymes, hormones, etc., and human gene therapy will be emphasized

BIO24498 Applied Biotechnology II

A continuation of Applications of Recombinant DNA Technology-I with topics selected to emphasize on techniques to engineer multicellular organisms to improve their productivity, and adaptability to the environment with emphasis on domestic animals and plants.

BIO24497 Biotechnology in Biological Control

Recombinant DNA technology to engineer various organisms to be used for controlling plant and animal pest population.

BIO24499 Research Project

Department directed research in one of the biology / biotechnology problems. Experiments, analysis and writing must be finished by the end of the semester.

FACULTY MEMBERS

Full Professor

Mohammed Saleem Shtayeh

Ph.D. in Fungal Ecology,
University of Reading, UK, 1982.

Associate Professors

Mousa Al-Aqtam

Ph.D. in Embryology and Histology ,
Stuttgart University, Germany, 1984.

Assistant Professors

Salwa Khalaf

Ph.D. in Cell-Biology-Immunology,
University of Glasgow, UK, 1985.

Sami Ya'ish

Ph.D. in Genetics,
Durham University, UK, 1990.

Kamel Adwan

Ph.D. in Microbiology,

Nael Sudqi Haj Mohammad Abu-Hasan Middle East Technical University, Turkey, 1992.
Ph.D. in Genetics,
University of Glasgow, U.K. 1984,
Genetic,.

Instructors

Fatinah al-Hanbali M.Sc. in Comparative Anatomy,
University of Jordan, Amman, Jordan, 1985.

Sami Bdeir M.Sc. in Parasitology,
Yarmouk University, Irbid, Jordan, 1986.

Naser M. Jarrar M.Sc. in Molecular Biology,
Yarmouk University, Irbid, Jordan, 1989.

Sabri Naser M.Sc. in Animal Physiology,
University of Jordan, Amman, Jordan, 1994.

Awni A. M. Abu-Hijleh Ph.D. in Biochemistry,
Middle East technical University,
Ankara, Turkey, 1999 , Biochemistry

Ghaleb Adwan Aristotelo University of Thessaloniki, Greece,
Virology

Ghadeer Ibraheem Issa Omar M.Sc. in Botany,
University of Jordan, Amman, 1993.

DEPARTMENT OF MEDICAL LABORATORY SCIENCES

Admission Requirements

With the advisor's assistance, prospective majors should declare their majors by completing an application form available at the College of Science offices, immediately after meeting the following criteria for majoring in the department:

1. Successful completion of Biology 24101, 24102, 24107, 24108, with overall cumulative average of at least 70% in each of all these courses.
2. Completion, successfully, of Chemistry 23101, 23102, 23107, 23108.
3. Completion of at least 30 credits 18 of which must be college requirements.

If number of students wishing to major in MLSC exceeds the number set by the department, the department council will accept students according to their grades in the following courses: 24101, 24102, 24107, 24108.

1. Requirements for B.Sc in Medical Laboratory Sciences

To earn a Bachelor of Science degree in Laboratory Sciences, a student must complete 155 credit hours. These include completion of university, college, department compulsory, and elective courses as well as "free" courses.

1A. Compulsory courses (60 credits)

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
23211	Analytical Chemistry	-	3	-	23102, 23108
23215	Practical Analytical Chemistry	1	-	4	23211 or concurrent
23233	Organic Chemistry	3	3	-	23102, 23108
23237	Practical Organic Chemistry	2	-	2	23233 or concurrent
24201	First Aid	1	-	-	Dept. approval
25225	Haematology	4	3	1	24102, 24108
25231	Medical Genetics	4	3	3	24102, 24108
25262	Anatomy	4	3	1	24102, 24108
25264	Parasitology	4	3	1	24108
25311	Biochemistry	4	3	1	23233, 23237
25322	Histology	4	3	1	25262, or concurrent

25342	Medical Microbiology	4	3	1	24102, 24108
25345	Immunology	3	2	1	25342
25362	Human Physiology	4	3	1	25311
25401	Project	1	-	-	Dept. approval
25412	Clinical Biochemistry	4	3	1	25311
25423	Pathology	4	3	1	25322
25446	Pharmacology	3	3	1	25412 or concurrent
25483	Scientific Research	3	3	-	Dept. approval

25448 Practical Training (15 credits)

MLS majors must complete 15 credit hours or equivalent to 105 days of practical training in medical and health centers determined by the department and in coordination with the Palestinian Ministry of Health.

1B. Elective courses Of the following electives, each student must complete 21 credits:

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
25202	Biostatistics	3	3	-	Dept. approval
25221	Microtechnique	3	1	2	24102, 24108
25336	Blood Banking	3	2	1	25342
25343	Diagnostic Bacteriology	3	2	1	25342
25344	Virology	3	2	1	25342
25347	Medical Mycology	3	1	1	25342
25430	Instrumentation & Identification	3	1	2	23212
25447	Toxicology	3	2	1	25446
25449	Body Fluid	3	2	1	25342, 25311
25462	Endocrinology	3	2	1	25142, 25322 or Dept. approval
25481	Special Topics	3	3	-	Dept. approval

25482	Public Health	3	3	-	Dept. approval
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1C. Free courses (6 credits) Of the following, each student is expected to complete six credits:

Course #	Course title	Credits	Hours per week		Prerequisite
			Class	Laboratory	
21221	Computer	3	3	-	-
51121	Principles of Business Management	3	3	-	-
52121	Principles of Accounting	3	3	-	-
53252	Principles of Economics	3	3	-	-
71412	Clinical Psychology	3	3	-	-

Course descriptions

MLA24201 First Aid

This is an introductory course which aims at teaching essential skills needed in emergency cases and the methods of providing patients with first aid prior to later treatment. It also teaches appropriate behavior during sudden critical situations such as bleeding and burns and how to prevent these dangers.

MLA25202 Biostatistics

This course introduces the methods of statistical data classification and presentation, as well as their collection, organization and analysis. It also introduces principles of probabilities, some probability distributions, distribution of samples, testing of hypotheses, simple linear regression and correlation, analysis of variance. There will be also medical and biological applications on all of the aforementioned.

MLA23211 Analytical Chemistry

In this course, students will study basic principles of analytical chemistry and its applications in medicine and industry. Students will be introduced to different methods of developed and used chemical analyses.

MLA25221 Microtechnique

Students, in this course, will learn about the basic principles and techniques for the preparation of microscopic slides of animals, plants, and bacteria. In addition, they will also learn about tissue culture, using microtome, and microscopic photography.

MLA25225 Haematology

This is a study of blood constituents in health and disease states with special emphasis on

lab diagnosis. In addition, the course is a study of different pneumonia diseases, blood cancer, factors behind blood clotting and other related diseases.

MLA25231 Medical Genetics

This course begins with the study of the basic principles of classical genetics, and modern molecular genetics. Then it moves to the study of the genetic diseases, which affect human beings with special emphasis on clinical applications of medical genetics.

MLA25233 Organic Chemistry

This course covers a number of topics: basic principles of organic chemistry, chemistry of hydrocarbonates and their derivatives, alcohol, proteins, amino acids, carbohydrates, phenols, ethers and halides. There is a special emphasis on their compounds, and important biological reactivity.

MLA25237 Organic Chemistry Lab

This is a lab course which focuses on lab methods and experiments to measure physical properties of organic compounds, methods of separation, purification, synthesis of simple organic compounds in the lab.

MLA25262 Anatomy

This course is an introduction to anatomy of the entire body. That is, it is an anatomical and physiological study of human beings' organs.

MLA25264 Parasitology

Topics covered in this course include morphology, structure, diseases and laboratory diagnosis of parasites, their life cycle, ways of infection and prevention with an emphasis on lab diagnosis of these parasites.

MLA25311 Biochemistry

This is an introduction to the study of biological compounds, carbohydrates, proteins, and fats, in the human body, and their metabolic reactivity; the way the body gets energy. It also introduces, briefly, major aspects of enzymology, types of restraining enzymatic reactivity and enzyme structures and co-enzymes.

MLA25322 Histology

This is a physical and microscopic study of structural appearance of different tissues, and the link between structure and function.

MLA25336 Blood Banking

The purpose of this course is to study different blood groups, Rh factor, test making, separation of blood constituents, methods of blood donation and reception and the precautions to be taken before and after blood taking.

MLA25342 Medical Microbiology

This is a microbial study of the structure, metabolism and genetics of microorganisms. In this course, students learn about principles of immunology, diseases caused by

microorganisms with emphasis on study of microbial aspects of these diseases.

MLA25343 Diagnostic Bacteriology

This is a detailed study of running a microbiological lab and how to take samples from patients and send them to lab for testing. The course also deals with methods of isolating and identifying bacteria in these samples and their diagnosis with emphasis on microbial diagnosis. It is also a study of bacteria causing diseases from clinical and diagnostic aspects.

MLA25344 Virology

This course introduces several topics related to viruses: structure, metabolism, genetics, diagnosis. It emphasizes infectious diseases caused by viruses in both human beings and animals, and ways of protection, treatment and diagnosis.

MLA25345 Immunology

This is a study of biological and biochemical aspects of host resistance, immunity, types of hypersensitivity and suggested treatment. Particular emphasis is given to laboratory work on Ag/Ab interactions of strange bodies with immunoglobulines and the modern methods of separation of these human immunoglobulines.

MLA25347 Medical Mycology

This course starts with principles of general fungi and other medically important fungi causing human diseases. The second part of the course deals with methods of protection, treatment and diagnosis of these diseases.

MLA25362 Human Physiology

This is an introductory course to the study of the human body; it is a mechanical study of different bodily organs, function of each, and basic cell structure.

MLA25401 Project

In this field research, students are asked to choose topics of interest suggested by department faculty members. The research project aims at training students to use different equipment available. It also aims at training the students on methods of research, how to use library resources, such as scientific periodicals, books, dissertations and how to collect, and analyze data and draw appropriate conclusions from scholarly papers. Each student is expected to submit a well-organized report on a topic of his/her own interest

MLA25412 Clinical Biochemistry

This is an advanced study of different human body fluids in health and disease states. The course also introduces methods of estimating these fluids by using high tech equipment and how to estimate normal and abnormal values in the body. It is also a quantitative and instrumental analysis. Particular emphasis is given to diagnosis, treatment, and disease prevention. Case studies of patients and quality control concepts will also be covered.

MLA25423 Pathology

This course covers a number of topics: mechanisms of diseases, basic principles of morphology, pathophysiological aspects of organ diseases, causes of diseases, changes at the cellular level, cancer diseases and their classification, their effects and consequences.

MLA25430 Instrumentation and Identification

Students, in this course, learn how to use instruments to determine, diagnostically, volume of different body fluids. These instruments include Flame Photometer, HPLC, G.C., Atomic Absorption, Clot Counter Blood Analyzer, PCR, and ELISA.

MLA25446 Pharmacology

This course is a study of chemical properties of drugs and their medicinal effects, treatment significance and toxic effect of these drugs on man and his body organs.

MLA25447 Toxicology

This is an introductory course which involves the study of chemical substances on living organisms as well as food, drugs, manufactured substances and pesticides, toxicology, protection against insects and chemical substances causing cancer.

MLA25448 Practical Training (15 credits)

After the student's completion of theoretical courses, the Practical Training Committee in the department distributes students among hospitals, health and medical centers and institutions, government and non-government health societies. Each student is expected to spend at least four months in one of these institutions. The directors of institutions concerned will forward periodical reports about the students' training and performance. Based on these reports, the committee will make evaluation of the students and submit its evaluation to the department council.

MLA25449 Body Fluids

This is a theoretical and analytical study of different body fluids. Pathological results, accompanied with clinical changes in the body, will be compared with the normal results of these fluids.

MLA25481 Special Topics

In this course, faculty members raise topics of their own interest, each according to his/her own specialization.

MLA25482 Public Health

This course aims at studying individual, family and community relationships, the cause of pathological phenomena in the society and their symptoms, sources of water and its pollution, air-transmitted diseases, flora and fauna. In addition, the course highlights diseases resulting from technological and urban development. Noise pollution is a case in point.

MLA25483 Scientific Research

This is an advanced study of the concepts, tools, and methods of scholarly research and the significance of research centers. Students are trained on how to conduct research and

publish. They then conduct a community-oriented field research study, covering a relevant medical issue, take samples, analyze results and complete a proper research paper in a systematic fashion.

FACULTY MEMBERS

Associate Professor

Suleiman Khalil

Ph.D. in Medicinal Chemistry,
Loughbrough University, UK, 1984.

Assistant Professor

Yahya Faydi

Ph.D. in Basic Medical Sciences,
American University of Beirut, Beirut, Lebanon, 1976.

Jomana Odeh

Ph.D. in Experimental Medicine,
McGill University, Canada, 1999.

Instructors

Azzam al-'Araj

M.Sc. in Microbiology,
Karachi University, Pakistan, 1976.

Mustafa Herzallah

M.Sc. in Clinical Chemistry,
University of Birmingham, UK, 1978.

Imad Malhis

M.Sc. in Medical Biology,
Long Island University, USA, 1980.

Suhad al-Alami

M.Sc. in Immunology,
University of Wisconsin, Milwaukee, USA, 1993.

Majdi Dweikat

M.Sc. In Medical Lab Sciences,
Leece University, Italy, 2001.
B.Sc. in Medical Lab Sciences,
An-Najah National University, Nablus, Palestine, 1995.

DEPARTMENT OF STATISTICS

Admission requirements

After completion of first year, a student, with the advisor's assistance, declares her/his major by completing an application available at the College of Science office. The student has to meet the following conditions:

1. Successful completion of Mathematics 21101, and 21102 with a cumulative average of at least 70% these two courses.
2. Successful completion of at least 18 credit hours of college requirements.

Requirements for a B.Sc. in Statistics

Students wishing to obtain a B.Sc. degree in Statistics must complete 131 credit hours distributed as follows: University requirements: 23; College 30; department 66.

I. Department compulsory courses: 66 credit hours distributed as follows:

Course #	Course title	Cr hrs	Prerequisite
21201	Calculus III	3	21102
21203	Principles of Differential Equations	3	21201
21211	Principles of Mathematics	3	21102
21212	Modern Analysis I	3	21211
21241	Linear Algebra I	3	21102
21321	Numerical Analysis I	3	21241
131111	Computer Programming I	3	-
28201	Statistical Methods I	3	-
28202	Statistical Methods II	3	28201
28301	Statistical Applications Using Computer	3	28202
28302	Probability Theory I	3	21201, 21211
28304	Mathematical Statistics I	3	28302
28311	Sampling Methodology I	3	28202
28312	Evaluation and Measurement Theory	3	28311

28321	Operations Research	3	21241
28331	Stochastic Processes	3	28302, 21212
28351	Experimental Design and ANOVA	3	28304
28352	Nonparametric Statistics	3	28304
28361	Demography	3	28201
28371	Time Series Analysis	3	28302
28399	Project	3	Dept's approval
531510	General Principles of Economics	3	-

II. Elective courses - Students may choose 12 credit hours from the following list:

Course #	Course title	Cr hrs	Prerequisite
28303	Probability Theory II	3	28302 + 21212
28305	Statistical Method II	3	28201
28322	Decision Theory	3	28304
28343	Applied Regression Analysis	3	28202 + 21241
28353	Categorical Data Analysis	3	28202
28441	Multivariate Analysis	3	28304
28442	Sequential Analysis	3	28304
28481	Special Topics in Statistics	3	Dept. approval
53458	Econometrics for Statistics Major	3	53151
56121	Principles of Finance	3	-

Course descriptions

STAT28201 Methods of Statistics I

Topics covered in this course are statistical data classes, measures of central tendency and variability, probability, concepts and calculations. In addition, the course covers discrete and continuous random variables and probability distributions, as well as bino-

mial and normal distributions and sampling distributions. The course ends with a look at Point and interval estimate for population mean and testing hypothesis for population mean.

STAT28202 Methods of Statistics

This course covers sampling distributions, confidence interval and testing hypothesis for single and two population parameters, regression and correlation, confidence interval and testing hypotheses for regression line parameters. Students also learn analysis of variable, chi-square tests and non-parametric tests.

STAT28301 Statistical Applications on Computer

The course mainly focuses on data evaluation and statistical tests using software packages.

STAT28302 Theory of Probability I

In this course, students receive instructions on axioms of probability, discrete and continuous random variables, probability distributions; binomial, geometric, negative binomial, uniform, exponential, gamma and normal. The course ends with an examination of moment generating functions and transformation distributions.

STAT28303 Theory of Probability II

This course begins with a review of properties of random variables and probability distributions as well as multinomial distribution. Then it moves to the study of distribution of order statistics, moments and moment generating function for some distributions. It also examines limiting distributions, types of convergences, in probability, in mean, in distribution, and characteristic function.

STAT28304 Mathematical Statistics I

Topics introduced in this course include decision theory, risk and loss function, unbiased estimation, efficiency, maximum likelihood estimation, confidence intervals, composite hypotheses, and sequential tests. The course also introduces best test, sufficient statistics, Rao-Blackwell Theorem, and Rao-Cramir inequality.

STAT28305 Mathematical Statistics II

Students in this course learn about properties of point estimate, exponential family, sufficiency and completeness, Bayesian estimation, most powerful test, sequential test, estimation and testing hypotheses for linear models.

STAT28311 Methods of Sampling

Topics taught are simple random sample, mean estimations, totality, regression proportion estimations, stratified sampling, cluster sampling, systematic sampling, and other ways/methods of sampling.

STAT28312 Measurement and Evaluation Theory

This course traces the historical development of measurement, its fields, its importance, its levels and standards, as well as the classical theory of measurement. The course also

examines the scientific traits of good administration/management; methods of its measurement, criteria and ways of its building and application. There are also field applications of measurement on different areas. In the second half of the course, students learn about evaluation in terms of its meaning, types, fields, and development; types of tests for evaluation, their construction and analysis techniques, the hows of evaluating students' performance and the effect of feedback on them.

STAT28321 Operations Research

Topics raised in this course are formulations of linear programming problems, graphic method, Simplex method, sensitivity analysis, net flow problems and game theory.

STAT28322 Decision Theory

This course examines basic concepts in statistical decision theory and relationship with game theory, games in normal structures, optimal strategies and values, prediction, induction and Bayesian method.

STAT28331 Stochastic Processes

This course covers several topics: random process, examples on sample process, random walk, gamblers' destructive series, death and birth series, wait series, Markov discrete chain, classification of series cases, constant distributions, pure jumping process, Poisson process, Gaus process, and Weiner process.

STAT28343 Applied Regression Analysis

Topics covered in this course include simple linear regression, independent multi-variate regression, interpretation of results, estimations and consistency check, error and remainder analysis, using matrices in regression, factor rotation and real applications.

STAT28351 Experiment Design and Analysis of Variance

Students, in this course, are introduced to random column design, Latin squares, two-factor designs, multi-factor comparative experiments, testing model accuracy in analysis of variance, insufficiency sector model factor analysis, and multi-comparisons.

STAT28352 Non-Parametric Methods

This course introduces applications on non-parametric methods, testing and interval and point estimate, consistency tables, order, Kolomogrov and Sameironov statistics.

STAT28353 Quality Data Analysis

This course gives an introduction to quality variables, two-variable tables, regression line equation (logistics), loglinear equation.

STAT28361 Demographic Statistics

This course covers population, numerated areas, population data, age structures, mortality rates, life tables and its structures, emigration and immigration, society structure and general census.

STAT28371 Time Series Analysis

Topics covered are description of time series, direction, constant rates, filterization, Fourier's analysis, models of stable series, self-correlation, prediction, Jenkins-Box methods, spectrum analysis.

STAT28399 Graduation Project

A student is assigned one specific topic to write about under the supervision of a department staffer. He/she is expected to submit a well-documented paper by the end of term.

STAT28441 Multivariate Analysis

This course covers a number of topics: multivariate normal distribution, estimation of mean vector, co-variance matrix, design of complete independent test of statistics, main components and correlation methods.

STAT28442 Sequential Analysis

This course introduces sequential tests for statistical hypotheses, function of sample size average, characteristic function for sequential tests, testing percentage of sequential probability and characteristic function.

STAT28481 Special Topics in Statistics

This course raises selected advanced topics in fields of statistics. Department and staffers determine the nature of these topics.

ECO53151 Principles of Economics

This course aims at acquainting students with basic principles in macroeconomics and microeconomics. Topics covered in this course include rules, and concepts pertinent to analysis of microeconomic units' behavior, concept of value, market mechanism and distribution theory. The course ends with a brief look at concepts pertinent to the Gross Domestic Product (G.D.P). and Gross National Income (G.N.I.) and ways of measuring them.

FIN53452 Principles of Finance

This course aims at introducing students to the value of money, the relationship between return and risk, financing foundations appropriate for companies, ways of studying and measuring risks, their types, profit policies followed by companies, cost of capital, and structure of optimal capital.

ECO53458 Econometrics for Statistics Students

This course begins with an introduction to principles used in economics to examine quantitatively the degree of consistency between models and economic theories with the reality. The course surveys regression model foundations, mini-square method, estimates and their properties, analysis of variance, hypotheses testing, confidence intervals, general linear model, and curves. Students also learn about prediction through the use of the regression model.

FACULTY MEMBERS

Associate Professors

Ali Barakat

Ph.D. in Biostatistics (Non-Parametric),
University of North Carolina at Chapel Hill,
Chapel Hill, North Carolina, 1989.

Assistant Professors

Abdel-Rahim Barham

Ph.D. in Mathematical Statistics,
University of Carbondale,
Carbondale, USA, 1996.

COLLEGE OF ARTS

Historical Background

The College of Arts, established in 1977, is one of the first colleges at An-Najah National University. The college started with a small number of full-time faculty members and students. It also had a few limited facilities and resources. In a short period of time, the college was able to reinforce its academic staff in terms of quantity and quality. It has also developed its academic programs and administrative apparatuses. It is now home to a burgeoning student body. Its diversified programs, both graduate and undergraduate, are sought by a considerable number of students. These programs secure good working opportunities for them after graduation.

Academic Programs

Like colleges of arts at other universities, the College of Arts at An-Najah offers two academic programs, leading to B.A. and M.A. degrees.

B.A. Undergraduate Programs

Arabic Language and Literature
English Language and Literature
History
Geography
Sociology and Social Work
Archaeology
Journalism
French

M.A. Graduate Programs

Arabic Language and Literature
Geography
History
Applied Linguistics and Translation

The college is also planning to expand its graduate programs to include other areas. It is now considering offering some Ph.D. programs.

Future Plans

The College of Arts is planning to increase the number of academic majors in line with the needs and changes in Palestinian society. To this end, the college seeks to open new departments, provide students with greater choices, and better enable them to realize their educational ambitions.

Relationship between College and Community

The College of Arts seeks to establish strong ties with the Palestinian society. It has held and organized a number of symposia and conferences on Palestinian related issues, both past and present. The college plans to employ the Community Service course to establish a cooperative relationship between the community institutions and the college. In this

way, institutions will develop as a result of students' services to them. At present, the students in the Department of Archaeology are providing their services and assistance to the preservation of Palestinian archaeological sites. They have done a number of excavations to uncover archaeological finds in Palestine.

Undergraduate Academic Plan

The College of Arts offers academic studies leading to a B.A. degree in the following majors:

- Arabic Language and Literature (1)
- English Language and Literature (2)
- History (3)
- Geography (4)
- Sociology and Social Work (5)
- Archaeology (6)
- Journalism (7)
- French Language and Literature (8)

In the freshman year, students, joining the College of Arts, complete general course requirements totalling 27 credits, distributed as follows:

1. College compulsory requirements: 7 courses (21 credits)

Course #	Course title	Credit hours
31111	Introduction to Literary Appreciation	3
32111	College English I	3
33111	History of Arab Thought	3
34111	Geography of Palestine	3
36112	Introduction to History of Ancient Civilizations	3
37111	Introduction to Mass Media	3

2. College electives

Course #	Course title	Credit hours
31112	Arabic Library	3
31113	Principles of Syntax	3
32112	College English II	3
32113	Spanish I	3
32114	Spanish II	3
32115	German I	3
32116	German II	3
33113	History of Islamic Civilization	3
34112	Introduction to Human Geography	3
34113	Introduction to Physical Geography	3
35111	Introduction to Sociology	3

35113	Refugees and Involuntary Emigration	3
36113	Introduction to Ancient History of Palestine and Jordan	3
37112	Mass Media in Arabic	3
38111	Writing Practice in French I	3
38112	Oral Communication in French	3
31112	Arabic Library	3

Requirements for major: See department concerned.

”Free” courses:

Students are expected to take two or three courses (six credits) from university departments’ course offerings.*

Students should take note of the following:

The 1994 students only may take 15 credits from the college compulsory courses.

1. Introduction to Literary Appreciation 31111
2. College English I 32111
3. History of Modern Thought 33111
4. Geography of Palestine 34111
5. Arab Society 35112

They also have to complete 12 credits from college elective requirements.

Students whose registration numbers begin with ”95” and ”96” now have six (6) compulsory courses (18 credits) with the addition of Introduction to History of Ancient Civilizations 36112, in the Archaeology Department. The college electives are now 9 credits.

Students holding registration number ”97 and above” now have seven compulsory courses (21 credits), as a result of adding Introduction to Mass Media 37111, which came with the creation of the Journalism Department. The electives have become 6 credits.

*Except for English and French Majors

COLLEGE COURSE DESCRIPTIONS

1. College compulsory courses

ART31111 Introduction to Literary Appreciation

This course introduces students to the artistic, intellectual and psychological dimensions of the literary text, improves their reading abilities, thus establishing an affective relationship between themselves and the text, on the one hand, and with text and its social environment and values, on the other.

ART32111 College English I

This course emphasizes the major comprehension skills: scanning, skimming, understanding meaning of difficult words from context, drawing inferences, differentiating between literal and non-literal meaning. The course also aims at developing the skill of summarizing a text. In the writing part, emphasis will be on note taking, vocabulary acquisition, completing application forms, writing a summary, and advertisements. The grammatical part focuses on verb tenses, parts of speech, conditionals, and formulation of questions.

ART33111 History of Arab Thought

The purpose of this course is to study the modern (European) intellectual trends and Arabs' intellectual trends in particular. The course begins with an examination of factors behind European Renaissance from the 16th-19th centuries. The course looks closely at the factors behind intellectual renaissance in the Arab World, namely, study and analysis of religious trends and movements, such as salafiyah (Islamic reform movement) and modernism, political trends such as the Islamic League, Ottoman League, the national, regional and pan-Arabism movements, social factors, underdevelopment and its underlying causes, social justice, freedom, equality, emancipation of women; it also examines scientific factors.

ART34111 Geography of Palestine

This is a regional study of Historical Palestine before 1948, the impact of historical events on it, political upheavals that have been storming the country for a long time, particularly from economic, human, and geographical perspectives.

ART35112 Arab Society

This course covers a number of topics: social institutions, social changes in the contemporary Arab World, Arab family, kinship system, ideological and class divisions. Emphasis is given to problems of growth and modernization.

ART36112 Introduction to History of Ancient Civilizations

This course is a study of Ancient East in terms of states and kingdoms established there and in terms of relationships among them politically and culturally. The course will also identify most important cultural centers in the Ancient East and the extent of man's contribution, in the area, to human civilization in general.

ART37111 Introduction to Mass Media

In general, this course is an introduction to the principles, concepts and basic theories in public communication. The course introduces various mass media systems, print and electronic, and also traces the historical development of basic public mass media: books, newspapers, periodicals, cinema, radio and television.

2. College Elective Courses

ART31112 Arabic Library

This course introduces Arabic writing movements from different dimensions. The course also introduces mainly Arabic heritage library, particularly prose and poetry library and its two streams: literary and linguistic. Students also receive training on how to deal directly with these primary sources.

ART31113 Principles of Syntax

In this course, student will receive instruction in general linguistic rules which help the student formulate a correct Arabic sentence. These rules include definition of grammatical terms, Arabic sentence and its types, number and its rules, grammatical tools representing syntactic methods such as conditional tools, question words and negation words. Students also learn about the principles of constructing the nominative or indicative in Arabic grammar. Student will apply these theoretical rules. These include selected texts taken from heritage books or volumes of classical poetry. Students are expected to make analysis of these texts, note down general grammatical information, thus helping them avoid mistakes in the mechanics of writing.

ART32112 College English II

This course begins with a review of all types of sentences in English, and then proceeds to paragraph writing. Students learn how to write a topic sentence, develop and support it with examples. Students also learn how to organize their writing to achieve coherence among sentences in a paragraph. In addition, students learn about different modes of writing: argumentation, description, definition, comparison and contrast, cause and effect, narration and classification. The course also covers other writing styles such as C.V. and application form completion, in addition to cover letters. At the end of the course, students will again go over basic grammatical rules. If time allows, student may also learn about essay writing.

ART32113 Spanish I

This is a course for beginners. The course primarily depends on the integration of the four language skills. It teaches students, in a simplified way, the basics of Spanish grammar. Students will be exposed to Spanish-oriented cultural texts in order to introduce students to Spanish society and civilization. This course should enable students to understand spoken Spanish and allow them to express themselves in writing

ART32114 Spanish II

This course is a continuation of Spanish I 32113. In this course, students learn more basics of Spanish grammar and oral communication in Spanish. The course emphasizes advanced vocabulary and rules of grammar, correct pronunciation, the hows of writing common expressions used in spoken and written language. The course will also deepen students' knowledge of the Spanish society.

ART32115 German I (for beginners)

This course teaches words and grammatical structures and rules mostly used in daily communication. The course covers a number of things: greetings, introducing people, naming household things, like food and drinks, ordering a meal, entertaining visitors, managing work, making arrangements for appointments, renting an apartment, buying things, ... etc.

ART32116 German II

This course is a continuation of German I 32115. By the end of the course, students should have learned the basics of German grammar. Students will also learn how to communicate with native speakers of German. This course covers a number of topics: description of pain, providing advice, narrating a story/reporting an event, talking about urban life, traffic, marketing, German culture, and German-speaking countries.

ART33113 History of Islamic Civilization

This course dwells on the following topics: concept of civilization and urbanism, difference between cultural and historical study, emergence of cultural studies, measures of civilization, potentials and elements of civilization, as well as social and historical potentials for the emergence of the Islamic civilization, the Holy Qur'an as the basis of Islamic civilization, elements and characteristics of Islamic civilization, status of Islamic civilization among other civilizations and its impact on them.

ART34112 Introduction to Human Geography

This course examines human geographic research methodologies, the most important schools of thought, how man came into being on earth and how he spread out.

ART34113 Introduction to Physical Geography

This course introduces a number of topics: solar system, celestial bodies, theories on origin of this planet, age, dimensions and structure of stones, seas, oceans and their origin, movement of sea and ocean waters, climate, soil, water, formation of earth surface phenomena.

ART35111 Introduction to Sociology

This is an introduction to basic concepts in sociology, social behavior, scholarly methods used in sociological analysis.

ART35113 Refugees and Involuntary Emigration

The purpose of this course is to acquaint students with the refugee phenomenon in a global context. The course begins with the historical development of refugee movements, reasons for seeking refuge, the refugee experience including accompanying social and psychological effects, especially when it comes to the life of refugees in a camp environment. Also examined are the influences of international policies and humanitarian aid, the role of donors, and policies of countries hosting refugees.

The role of international law in ameliorating the plight of the refugee and the theoretical frameworks, which have endeavored to explain this phenomenon, are addressed. Inevitably and specifically, the subject comes close to home with the longstanding

anguish of our own Palestinian refugees, and deals with factors contributing to their displacement and homelessness, both here and in adjacent countries. Some light is also shed on the transfer process through its stages, and the resulting suffering inflicted on Palestinian people. The course concludes with some emphasis on increasing political awareness among the refugees, their role in the P.L.O., the mandate of the international community to protect Palestinian refugees, and the international initiatives proposed to solve their plight.

ART36113 Introduction to Ancient History of Palestine and Jordan

A study of historical ages of both Palestine and Jordan, course 36113 starts from the Old Stone Age up to the Iron Age. Further, the course highlights the relationships between Palestine and neighboring empires, especially those in Iraq and Egypt. The course also touches on cultural achievements of the region in past ages.

ART37112 Mass Media (in Arabic)

An introduction to journalistic editing, this course reinforces students' command of the Arabic language and strengthens self-expression abilities through writing effectively and with clarity. The following areas are covered: Grammatical and morphological rules with emphasis on the countable, uncountable, the plural, the numbers, the dual, and the indeclinable, etc.; correct spelling; correct punctuation rules; journalistic idioms. The theoretical part of the course will be supported with examples and models culled from local newspapers, magazines and journals, in Arabic. This will acquaint students with the language of mass media and common mistakes (goofs) made by people in the field.

ART38111 Writing Practice in French I

This course, which introduces the French alphabet and method of writing words, masculine and feminine nouns, singular and plural, also includes sentence level, types of sentences, personal pronouns, verb conjugations, direct and indirect objects. Visual aids such as drawings and pictures are used to advantage. Editing short responses, accepting or turning down offers, giving thanks or apology, brief justifications of answers, are some learning exercises.

ART38112 Oral Communication in French

This course teaches spoken French through use of modern teaching methods typically employed in non-Francophone countries. At course conclusion, students are expected to speak and understand some French, especially when it comes to introductions, getting to know others, and holding simple conversations.

DEPARTMENT OF ARABIC LANGUAGE AND LITERATURE

Requirements for admission

1. Successful completion of Arabic 31111 and 31112: Introduction to Literary Appreciation and Arabic Library
2. A minimum of 70% in each of the two courses.
3. Prospective majors should sit for a proficiency examination which counts for 30%.
4. In case of a large number of applicants, acceptance will be arranged in descending order according to their total major averages.

I. Requirements for the Undergraduate Degree in Arabic

The Department of Arabic offers a single specialization in Arabic Language and Literature. Students wishing to obtain a B.A. in this specialization must successfully complete 137 credit hours. Of these, 23 are university requirements, 27 college, Dept. (66 as a compulsory and 15 as elective) and six are "free" hours.

A. Compulsory courses: 66 credits

Course #	Course title	Credit hours	Prerequisite
31211	Morphology	3	-
31212	Syntax I	3	-
31213	Arabic Rhetoric	3	-
31214	History of Pre-Islamic Literature & Its Texts	3	31214
31216	History of Umayyad Literature & Its Texts	3	31215
31217	Arabic Rhetoric II	3	31213
31312	Syntax II	3	31212
31313	Abbassid Literature-Poetry	3	31216
31314	Arabic Phonetics	3	-
31315	Andalusi and Maghrebi Literatures	3	-
31316	History of Arabic Literary Criticism	3	-
31317	Abbassid Literature-Prose	3	-
31318	Research	3	-
31411	Literature in Egypt and Greater Syria	3	31313
31412	Syntax III	3	31312
31413	Modern Literature I	3	-
31414	Arabic Philology	3	-
31415	Modern Literature II	3	-
31416	Special Topic-Modern Arab Literature	3	-
31453	Special Topic-Modern Palestinian Literature	3	-
31454	Palestinian Popular Literature	3	-
	Total	66	-

IB. Elective courses (15 credits)

Each student is to choose 15 credits from the following list:

Literature courses

Course #	Course title	Credit hours	Prerequisite
31228	Sciences of Hadith	3	-
31253	Special Topic in Pre-Islamic Literature	3	-
31254	Special Topic in Early Islamic Literature	3	-
31255	Special Topic in Umayyad Literature	3	-
31256	Rhetoric in Light of Modern Criticism	3	From Shari'a College
31257	Qur'anic Studies	3	From Shari'a College
31351	Prosody and Rhyme	3	-
31352	Literary Life in Aleppo	3	-
31353	Special Topic in Andalusí Literature	3	-
31331	Exegesis and Exegesists' Methods	3	From Shari'a College
31451	Special Topic in Literature of Egypt and Greater Syria	3	-
31452	Modern Palestinian Literature	3	-
31454	Special Topic in Modern Arabic Literature	3	-
33336	Special Topic in History of Islamic Civilization	3	From Dept. of History
31460	Comparative Literature	3	-

Language courses

Course #	Course title	Credit hours	Prerequisite
31259	Hebrew Language I	3	-
31260	Hebrew Language II	3	-
31357	Arabic Dictionaries	3	-
31358	General Linguistics	3	-
31456	Schools of Arabic Grammar	3	-
31457	Syntax IV	3	-

Methods courses

Course #	Course title	Credit hours	Prerequisite
31461	Methods of Teaching Arabic	3	-

II. Course Descriptions

ARA31211 Morphology

This course starts with a definition of morphology and its place in linguistic analysis. After this, the course moves to cover a number of morphological topics: morphological derivatives, dualism, I'lal (defectiveness), ibdal (appositional substantive). This is coupled with application in the form of exercises.

ARA31212 Syntax

This course covers basic syntactic topics such as "kana" (was) and its "sisters", voice, subject and predicate and the disintentionally inflective. It also reinforces students' knowledge of the basics of syntax to make use of them in spoken and written Arabic.

ARA31213 Arabic Rhetoric

This course traces the emergence of Arabic rhetoric in ancient poetry and the environments which contributed to development of rhetoric as a field of study. Students will be introduced to the main forms of rhetoric: science/art of metaphors and good style, and science of rhetoric and their application in ancient and modern poetry or prose. This will help the student develop his/her appreciation and make him/her discover aspects of aesthetics in rhetorical images (metaphors/similes).

ARA31214 History of Pre-Islamic Literature and Its Texts

This course begins by introducing pre-Islamic literature, through Jahili poetry, identifying artistic values in this poetry and dwelling on its idioms based on the most documented sources. The course will touch on the political, social and economic life of this age through selected poetry readings. The course also tackles some literary issues and phenomena such as plagiarism, making poetry a means of living and the utterly destitute (sa'alik) poetry.

ARA31215 History of Early Islamic Literature and Its Texts

This is a study of the literary life at the outset of the Islamic era prior to the establishment of the Umayyad caliphate. The course will examine a set of literary texts which reflect the image of literature. This will show demarcation lines between Islamic and Jahili characteristics.

ARA31216 History of Umayyad Literature and Its Texts

This is a study of the most important environments of the Arab poetry at the time: Hijaz, Bedouin, Greater Syria, Iraq, and Kharassan. The course aims at illustrating poetic specialty during the era and drawing a picture, a general one, through literary texts.

ARA31217 Arabic Rhetoric II

This course is a continuation of topics covered in Arabic Rhetoric I. In this course, focus is on the study of semantics coupled with an attempt to link ancient subjects, such as methods of composition, brevity, verbosity, putting forward and putting back, methods of abbreviation, with criticisms and modern rhetorical studies.

ARA31228 Sciences of Hadith

Offered by College of Shari'a, this course focuses on sources of al-Hadith, ways of transference, its quotation in and influence on Arabic language and literature.

ARA31253 Special Topic in Pre-Islamic Literature

The instructor focuses on a specific issue pertinent to Pre-Islamic Age literature.

ARA31254 Special Topic in Early Islamic Literature

Early Islamic era literature, with possible focus on a poet of the age, his life and work, studied from different perspectives.

ARA31255 Special Topic in Umayyad Literature

Devoted to the study of the Umayyad Arabic poetry environment. Platonic Bedouin love poetry, or polemic poetry of Iraq, are two cases in point. The study is thorough and explores the subject from all its aspects.

ARA31256 Rhetoric in Light of Modern Criticism

Arabic rhetoric is studied in the light of modern and old Arabic criticism theories, in an attempt to link the old with the new and see how Arabic rhetoric is keeping abreast of modern studies in terms of theory and application.

ARA31275 Qur'anic Studies

The objective of this course is to link linguistic and literary study with the Holy Qur'an. The course studies the Holy Qur'an, including identifying Qur'anic terms. For this purpose, students are expected to study Qur'anic sciences: their divisions, reasons for their revelation, the Meccan and Medianite Suras, al-Muhkam, al-mutashabeh, refutation of the argument of al-nasikh and al-mansukh plus various Holy Qur'an recitations. The course also explores aspects of man's relationship with the environment.

ARA31259 Hebrew Language I

Principles and foundations of Hebrew which should enable students to express themselves orally and in writing.

ARA31312 Syntax II

Main topics covered in this syntax course are doer of action, transitive and intransitive verbs, objects, prepositions and exceptions. There will be grammatical applications to reinforce these topics.

ARA31313 Abbassid Literature-Poetry

This is a course designed to study literary life and trends in general and then the new poetry trends in particular. There is also an analytical study of selected poetry texts by prominent Abbassid poets.

ARA31314 Arabic Phonetics

Beginning by defining phonology, the course includes works of classical Arab scholars in the field, casts light on development of phonology by Western linguists, and moves on to study the articulatory system, the manner and rules of sound production. There is also a comprehensive study of silent sound and harkat (vowels) in Arabic, affixes and their types and some phonological phenomena and laws.

ARA31315 Andalusian and Maghrebi Literatures

Literary life in Andalus is examined, including trends that had influenced Andalusian poetry. Andalusian poetry as used in eulogy, landscape description, satire, elegy etc. is part of this course. Literary prose in Andalus is illuminated through different periods, with emphasis on the influence of Andalusian literary scene on its surrounding and vice versa.

ARA31316 History of Arabic Literary Criticism

This course is a study of the history of Arabic literary criticism in its early ages; there will be case studies of Ben Salam, Ben Qutaiba, al-Jahith, al-Qadi al-Jirjani in terms of their contributions to literary criticism.

ARA31317 Abbassid Literature-Prose

This course is a general study of literary and intellectual life during the Abbassid era. The emergence and development of prose writing, and its subject matter are examined, coupled with a literary analysis of texts of Abbassid-period writers.

ARA31318 Research

Students are introduced to methods of both language and literary research, and learn how to evaluate different sources and references. They will gain skills in collecting, arranging, and classifying primary materials, and making induction of results. Furthermore, students will be exposed to different research approaches, textual criticism (evaluation) of old texts and their publishing. Students will be taught how to read different handwritings, MSS, types of editions and their examination and binding, amendment of errors, and preparation of necessary indexes. Students are expected to write an original research based on topics covered in the course.

ARA31331 Exegesis and Exegetists' Methods

This course is offered by the College of Shari'a.

ARA31351 Prosody and Rhyme

Students are introduced to prosody, its content, and reasons for devising it. They will also learn the ten meters generated for different reasons coupled with roots, divisions of poetic verse and divisions of poetry schemes, poetry necessities, study of the modernization movement in Arabic poetry, particularly concerning the form of the modern Arab poem whether it be classical or free verse.

ARA31352 Literary Life in Aleppo

Men of letters played a leading role in the intellectual life of Syria's Aleppo, for a considerable period of time. This course examines aspects of the impact that the literary scene had on the lives of residents of the city and surrounding area.

ARA31353 Special Topic in Andalusian Literature

In this course, a number of Andalusian literary texts will be examined. Students will be asked to make analysis to find out areas of aesthetics in them. Students will be introduced to a large number of Andalusian publications and manuscripts. They will be required to write reviews of materials read.

ARA31357 Arabic Dictionaries

This course begins with a historical study of invention of the dictionary by ancient peoples, including the Arabs. Then the course will move to study the first beginnings of an Arabic dictionary, early endeavors in this respect, major Arabic dictionary schools: phonetics schools pioneered by al-Khalil Ben Ahmad in his book *Al-'Ayn*, Al-Qafiyya School by al-Jawhari in *al-Sahah Dictionary*; Al-Ibtathiyaa School or al-Haditha School by al-Zamakhshari in *Asass al-Balagha Dictionary*. The course will conclude with an introduction to the state of modern Arabic dictionary, its needs, and endeavors made by linguistic conclaves to amend it.

ARA31358 General Linguistics

This course covers a number of topics: Meaning and purpose of linguistics; difference between linguistics and philology, and history of this science among the Arabs and Europeans in the past and in modern times. Branches of this science include phonology, semiotics, morphology, syntax, and semantics. In addition, the course will cover other issues: definitions of language by ancient philologists and modern linguists, theories on writing systems, and origins of language.

ARA31260 Hebrew Language II

This course, a continuation of Hebrew I, aims at achieving a deeper understanding of the Hebrew language. Arabic and Hebrew will be compared and students will be trained in translation between the two languages.

ARA31411 Literature in Egypt and Greater Syria

A comprehensive analytical study of selected poetry texts from the Fatimid, Ayyubi and Mamluki ages, with emphasis on the study of holy war literature, sufism poetry, and sectarian literature. The course also includes the study of writing and its subjects, oration and its topics and features, plus the publishing movement in general.

ARA31412 Syntax III

This course covers a number of topics including prepositions, addition, vocative, present tense in the accusative or subjunctive cases, appositives, and the indeclinable. A grasp of language rules will greatly increase students' reading and writing capabilities.

ARA31413 Modern Arabic Literature I

Beginning with a glimpse of literary life in the Ottoman age, the class then examines intellectual developments rendered by the French Revolution and the factors behind the European Renaissance in the 19th century. There will be a study of aspects of imitation and creativity in al-Baroudi's poetry, influence of the European Renaissance on Ahmad Shawki, Mutran, and al-Rasafi. Developments in poetry at the hands of Apollo's and Divan's groups as well as exile poets, and some free verse poets, are included. Literary texts are used to demonstrate these influences and developments.

ARA31414 Arabic Philology

Topics covered in this course include development of the Arabic language, its phonemes, structures, morphemes; study of ancient Arabic dialects and their features; historical relationship between Arabic and other languages, and semitic languages in particular. There will also be a study of some linguistic phenomena such as a synonyms, antonyms, homonyms.

ARA31415 Modern Arabic Literature II

In this course, the emphasis will be on the impact of modern renaissance on Arabic prose in the 19th and 20th centuries. Celebrities to be studied include Tahtawi and Shidyaq. And there will be a study of essay writing through Rifa'i's *Wahiyeh al Qalam*. Emphasis is also placed on early short story writing endeavors from Zeinab to Najib Mahfouz, and later. Time will be devoted to drama, starting with al-Naqqash, al-Qabani and Sannu', followed by Tawfiq al Hakim and others, using applicable study models.

ARA31451 Special Topic in Literature of Egypt and Greater Syria

This is a study of a specific literary phenomenon from the Ayyubi and Mamluki ages. Of these topics, the course will introduce Divan al-Insha' or Almawsu'at, Sufism poetry, prophetic eulogy poetry ... A case study of a celebrity might be chosen. Of these, the students may take Amara al- Yamani, Osama al-Haddad, Osama Ibn al-Munkiz, al-Qadi

al-Fadil, al-Busairee, al-Qalqashandi, etc ...

ARA31452 Modern Palestinian Literature

This course surveys the history of Palestinian literature from the Renaissance until the present, and will highlight major genres of Palestinian literature: poetry, fiction and drama. It will also introduce major Palestinian authors in Palestine and in the Diaspora.

ARA31453 Special Topic in Modern Palestinian Literature

Specific themes, common in Palestinian literature, such as *land, resistance literature, exile literature, poetry of the Nakba (disaster of 1948)* are examined. An artistic feature, such as symbolism in Palestinian literature, structure of novel or language in narrative prose, may be included. A study of a Palestinian writer such as Ghassan Kanafani, Jabra I. Jabra, Emil Habibi, Mahmoud Darwish or Samih al-Qassim, may highlight this course.

ARA31416 Special Topic in Modern Arabic Literature

An outstanding topic in modern Arab literature, such as East and West in the Arabic novel, image of the Jew in Arabic literature, Arab heritage symbols in contemporary Arabic poetry will be embraced. Also introduced will be poetry, novel or short story celebrity writers such as Najib Mahfouz, Amal Dankal, and Abdel Wahab al-Bayyati, Abdel-Rahman Munif or Yousef Idris. Students may find *contemporary Arab Feminist literature, or the influence of European poetry on contemporary Arabic poetry* of interest.

ARA31456 Schools of Arabic Grammar

This courses traces the history of Arabic syntax, the stages of its development, and will cover schools of grammar such as al-Basriyyah, al-Kuffiyyah, al-Baghdadiyyah and al-Andalusiyyah. It will examine Arabic syntax fundamentals, such as theory of vowels, analogy and doer, in addition to issues of disagreement between Basra and Kuffa including biographies of people behind these schools.

ARA31457 Syntax IV

This advanced course covers both theoretical and practical topics as well as derivatives in Arabic syntax. These include Vocative chapter, extracted from a heritage syntax book; at-Ta'liq, Ilgha and al-I'mal chapter; syntactic methods such as conditional method, questioning method, emphasis method, active participle, their structure and function and grammarians' opinions about them. Students will be drilled on these topics through prose and poetry texts, both modern and old, as well as other texts from the Holy Qur'an.

ARA31454 Palestinian Popular literature

This course begins with an introduction to popular literature in general and then moves to Palestinian popular literature, in terms of its genres, elements, characteristics, themes and extension across time and place. This kind of literature is a literary art closely related to the environment in which it came into being. The course also raises the question of why we study Palestinian popular literature in particular and its association with the people's sentiments. The course also sheds light on leading lights of this literature and models from their literature.

ARA31460 Comparative Literature

In this course, students will be introduced to literary intellectual contributions of other peoples and other cultures throughout different periods. The course also examines relationship between peoples' literary contributions and different cultures through analysis by using comparative literary methods. In addition, the students will learn about the history of comparative literature. The relationship between different world literatures and national literatures will also be investigated. The course also covers other topics: fields of research in comparative literature and methods, worldiness of literature and its factors, literary patterns, human models, literary schools, comparative literature conferences and their roles.

ARA31461 Methods of Teaching Arabic

As implied by the title, the course introduces methods of teaching Arabic language skills appropriate to the learner's stage of development.

FACULTY MEMBERS

Full Professors

Ibrahim al-Khawaja	Ph.D. in Umayyad Literature, University of Cairo, Cairo, Egypt, 1977.
Ahmed Hamed	Ph.D. in Syntax and General Linguistics, University of Alexandria, Alexandria, Egypt, 1978.
Mohammed Noufal	Ph.D. in Abbassid Literature, Al-Azhar University, Cairo, Egypt, 1979.
Yahya Jabr	Ph.D. in Linguistics, University of Cairo, Cairo, Egypt, 1977.
Adel Abu-Amsha	Ph.D. in Modern Literature, Umm al-Qura University, Mecca, Saudi Arabia, 1981.
Mohammed Jawad al-Noori	Ph.D. in Linguistic Sciences, Ein Shams University, Ein Shams, Egypt, 1982.
Wael Abu-Saleh	Ph.D. in Andalusian Studies, University of Alexandria, Alexandria, Egypt, 1982.
Khalil Odeh	Ph.D. in Arabic Rhetoric, University of Cairo, Cairo, Egypt, 1987.
Associate Professors	
Adel al-Ostah	Modern Literature and Criticism, University of Bamberg, Berlin, Germany, 1991.
Hamdi al-Jabali	Ph.D. in Language and Syntax, University of Jordan, Amman, Jordan, 1995.
Mohammed al-Raba'	Ph.D. in Syntax, University of Jordan, Amman, Jordan, 1995.

Assistant Professors

Ghanem Miz'il

Ph.D. in Comparative Literature:
Semitic Comparative Literature,
University of Bamberg, Berlin, Germany, 1993.

Ihsan Al-Deek

Ph.D in Pre-Islamic Literature,
University of Jordan, Amman, Jordan, 1996.

Fathi Khader

Ph.D in Pre-Islamic Literature,
An-Neelayn University, Soudan, 2003
M.A. in Pre-Islamic Literature,
An-Najah National University,
Nablus, Palestine, 1995.

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

Curriculum Plan

The Department of English Language and Literature offers a single specialization in English language and literature. Students wishing to obtain a B.A. in this single specialization must successfully complete 141 credit hours: of these, 23 are University requirements, 27, College, 90, Department (69 as compulsory and 21 as elective), and the one-credit-hour Qualifying Exam.

Requirements for admission:

A. Requirements for admission to single specialization:

1. A minimum of 70% in each of E10103 and E10323; their average counts for 20% (of total specialization grade).*
2. A minimum of 70% in each of E32111 and E32112; their average counts for 45%.
3. The English Proficiency Examination, given twice at the end of the second semester and of the summer session of the academic year, counts for 35%.**

B. Applicants for admission to single specialization will be arranged in descending order according to their specialization grades.***

C. A student can sit for the English Proficiency Exam only once.

D. Student takes E10103, E10323, E32111 and E32112 for the purpose of competing for the English Major only once. But if student achieves the English specialization grade determined for admission into the Department, without having fulfilled a Major condition of a course of the four aforementioned, then student may repeat, for one time only, the course concerned to meet the Major condition related to that course.

If student fails to meet the Major condition the second time, s/he is denied admission and has to seek another major within the College of Arts.

* A student who achieves a grade below 50% on the Placement Exam has to study E100, first.

** In certain conditions (e.g., a reasonable number of students who are to sit for it), it might also be given at the end of the 1st semester.

*** Number of applicants admitted, starting from the highest Major average, is determined from year to year.

I. Compulsory courses

Course #	Course title	Credit hours	Prerequisite
32200	Conversation and Aural Comprehension	3	32111
32202	Advanced Grammar	3	10323
32203	Writing and Research	3	32112
32236	Phonetics and Phonology	3	32234
32234	Introduction to Linguistics	3	-
32260	Introduction to Literature	3	-
32261	The Novel and the Short Story	3	32260
32262	Poetry	3	32260
32271	Western Civilization	3	32260
32303	Advanced Writing	3	32203
32340	Syntax and Syntactic Theory	3	32234
32343	Semantics	3	32234
32360	Drama	3	32260
32361	English Literature Through Late C18 : Survey-I	3	32261+32262
32362	English Literature From Late C18th Onward : Survey II	3	32361
32386	Contrastive Linguistics	3	32236+32340
32390	Translation I	3	32202+32203+D' s. P.
32418	TEFL I	3	32386
32420	History of the English Language	3	32340
32459	Literary Criticism	3	32362
32460	American Literature: Survey	3	32361
32462	Shakespeare	3	32360
32490	Research Methodology	3	32203

* D's.P.: Department's Permission.

II. Electives

Student is to take 21 credit hours from this section and has to select at least three courses from each of the following two lists. Student's interest decides the remaining 03 hours (from the areas of Language, Linguistics or Literature).

A: Language and Linguistics

Course #	Course title	Credit hours	Prerequisite
32220	Oral Communication	3	32200
32223	The English Essay	3	32203
32344	Schools of Linguistics	3	32234
32439	Computational Linguistics	3	32340
32440	Applied Linguistics	3	32340
32441	Sociolinguistics	3	32236
32442	Psycholinguistics	3	32340+32343
32443	Discourse Analysis	3	32340+32343
32447	TEFL II	3	32418
32450	Special Topic in Linguistics	3	32340+D's. P.
32491	Translation II	3	32390

B: Literature

Course #	Course title	Credit hours	Prerequisite
32338	Autobiography	3	32261
32373	The Romantic Age	3	32262
32377	The Development of the Novel	3	32261
32378	C18th Literature Excluding the Novel	3	32261+32262
32379	The Victorian Age	3	32361
32476	World Literature	3	32361
32477	C20th British Literature	3	32362
32478	C20th American Literature	3	32460
32479	Post-Colonial Literature	3	32362
32480	Special Topic in Literature	3	32362+D's.P.
32483	Studies in an English Literary Movement	3	32362+D's.P.
32484	Comparative Literature	3	32362+D's.P.
32492	Language and Literature	3	32260+32340

*D's. P.: Department's Permission

Note: This plan applies to English Majors from 1st Semester 2001/2002.

Course Description**University Requirements:**

* In parentheses are the old course numbers as they appear in the plan used between 1986-1997. Outside parentheses are the numbers as they appear in the current plan (from semester 1st, 1997/1998).

E32098 English Placement Test

This test aims at categorizing students, on admission to university, in accordance with their competence in English. Students who score 80% and above are exempted from E10103. Students who score 50%-79% register in the University English basic courses as normal. Those who score below 50% should sign up for E100 and pass, before they engage in further English courses.

E32100 Remedial English 100

This intensive English course (four teaching hours a week) is offered to students who score poorly (i.e. below 50%) on the placement test. Since the major concern of this course is to foster the students' proficiency before starting their ordinary university English basic courses, special emphasis has been placed on enhancing the students' ability to effectively acquire the four language skills: reading, writing, listening, and speaking. Specifically, the course attempts to ensure an academically acceptable performance on the part of the students at the level of the English basic courses. Moreover, the course aims at expanding students' vocabulary needed for various tasks.

E10103 University English I

This course is designed for students who need to work on the four skills of the language: reading, writing, listening, and speaking. The development of vocabulary and skills of comprehension are integral parts of the course. The course encourages a more analytical and independent approach to study and helps prepare the students for any subsequent exam preparation such as the Cambridge Certificate in Advanced English.

E10322 University English II**(English for the Science Colleges: Science, Pharmacy, Engineering, Agriculture, & Information Technology)**

E10322 is a basic University English requirement which is offered to students from the colleges of Science, Engineering, Pharmacy, Agriculture, & Information Technology. The students will be exposed to a range of science-based writings in English that supply students with samples of the kind of academic English they are likely to encounter in their textbooks. Exercises on grammar, vocabulary and textual organization are geared towards developing students' observational and analytical skills that aid comprehension. The course uses an integrated approach which allows for communicative interaction in the class to actively test and broaden the listening and speaking abilities of the students. Furthermore, the acquisition of vocabulary items will be reinforced through their use in written sentences. Additional training in writing will be given through questions and answers, summaries of principal ideas in a reading passage and the preparation of reports.

E10322A University English II (for Medicine: Human and Veterinary)

English 10322A (medical terminology) students are introduced to medical terms as listed in Chamber's *The Language of Medicine*. Students are asked to study these terms in a proper context of a medical discourse. The course generally begins with the basic word structure and leads the students to a variety of medical terms in a write-in text in which students are asked to answer exercise questions. In addition, students study some supplementary passages in which medical terms are extensively used. Similarly, the course, as taught to students of Medicine: Human and Veterinary, focuses generally on language learning and develops the language study skills that are needed for the advanced reader. The course broadens and deepens students' language skills generally, with a special focus on the reading skills. Passages are selected on an ESP basis to suit the needs of this particular group. Further, the course gives a training on the four language skills through an integrated approach. Reading strategies are discussed and developed through a range of various texts and question types. Writing formats are introduced and speaking skills are encouraged through frequent student-centered activities.

**E10323 University English II
(English for Humanities' Colleges: Arts, Fine Arts, Shari'a & Education)**

University English E10323 is intended to serve students of the Humanities' Colleges: Shari'a, Education, Arts, and Fine Arts. This course carries on reading skills emphasized in University English I (10103). Its main objective is to develop the students' reading comprehension skills of skimming, scanning, analytic thinking and passing judgements on the material read. Besides these reading skills, the course provides students with an invaluable opportunity to develop their vocabulary inventory.

Moreover, students are trained in realizing text organization and development of English style: this entails recognizing thesis - and topic sentences, subordination, exemplification and other organizational devices. Students will also be trained to see different types of style: descriptive, analytic, expository, narrative ... etc. The text chosen is geared towards achieving these aims.

Speaking, listening comprehension, and writing are integral parts of the course. With respect to the latter, there are writing exercises that are to be done in class or as home assignments. In fact, the vocabulary and comprehension exercises can also enhance the students' writing skills. Instructors are advised to have students listen, from time to time, to tapes with conversations performed by a native speaker. The aim of such activities is, of course, to test the students' oral comprehension as well as expose them to more than one form of pronunciation.

**E10325 University English II
(English for the Colleges of Economics and Administrative Sciences and Law)**

This course is open only to students of the Economics and Administrative Sciences and Law. In reading, students will be exposed to a variety of materials, in business and law, taken from college texts, magazines, newspapers and related literature. Students will learn how to identify main ideas, use context clues, build vocabulary, recognize organizational structure and rhetorical strategies. In writing, students will gain mastery of English sentence structure and paragraph. In speaking, the focus will be on development of conversational skills useful in everyday life. In listening, the aim is to

perfect students' pronunciation, stress, intonation and help them understand a spoken text. The course also aims at preparing students to function effectively in the world of work, in business and law, after graduation.

development of conversational skills useful in everyday life. In listening, the aim is to perfect students' pronunciation, stress, intonation and help them understand a spoken text. The course also aims at preparing students to function effectively in the world of work, in business and law, after graduation.

College of Arts Requirements:

E32111 College English I

This course focuses on key comprehension skills, such as locating main ideas and supporting details, understanding vocabulary in context, making inferences, finding transitions, distinguishing literal and non-literal interpretations, and summarizing. The writing part of the course emphasizes organizing vocabulary lists, taking notes, writing summaries, filling in tables, and writing advertisements. The grammar part of the course focuses on tenses (present and perfect), markers, word forms, conditionals and question forms.

E32112 College English II

This course begins with a review of effective sentences, then focuses on the paragraph. Students will be taught to develop topic sentences into unified and coherent paragraphs using different methods of paragraph development. They will also learn how to fill out application forms, write cover letters, and draft CVs. A grammar review is an essential part of this course. The essay will be introduced briefly towards the end of the semester.

English Department Courses

A. Compulsory Courses

E32200 Conversation and Aural Comprehension

This course aims at improving the students' speaking and listening skills, increasing their vocabulary, and training them in the functions and notions of language. Students practice using formal and informal English in a variety of situations. The aims of the course are to be achieved through organizing group activities, discussions, role-playing, and listening to cassette tapes, among other things.

E32202 Advanced Grammar

This course employs an eclectic approach to the study of grammar. It introduces students to advanced and complex grammatical structures and systematically relates these structures to meanings, uses, and situations.

E32203 Writing and Research

This course begins with a review of the paragraph before it focuses on the expository essay. Students will read different kinds of expository essays (description, comparison/contrast, process, classification, definition, persuasion) and will learn how to write them. Emphasis will be put on writing effective thesis statements, introductions, and conclusions, and on developing generally unified and coherent essays. Students will also be taught how to edit their work. They will practice answering essay questions and writing about literature. The course will briefly introduce the research paper.

E32232 (E32231) Introduction to Linguistics

This course is an introduction to the study of language, including branches of linguistics and the relationship of linguistics to other fields.

E32231 (E32230) Phonetics and Phonology

The Phonetics part of the course trains the students in Linear Transcription System and in production and perception of speech sounds. It provides students with the description of sounds (place and manner of articulation) and their classification into consonants, vowels and diphthongs. The Phonology part of the course is concerned with the distribution and relations of sounds. It also provides the students with the various phonological processes and rules.

E32260 Introduction to Literature

This course introduces students to different theories of the meaning of literature. Through the study of representative literary texts, students learn the basic principles of literary interpretation and the elements of different literary forms such as the short story, novel, drama, and poetry.

E32261 The Novel and The Short Story

This course trains students in the analysis of fiction, particularly the structure of novels and short stories, by studying representative English and American specimens of these genres.

E32262 Poetry

Through the study of a wide-ranging selection of works by well-known British and American poets, this course provides a close analysis of the language and stylistic features of poetry. The poetry features studied include structure, diction, prosody and the various sound devices used by the poets in the creation of images. The course also introduces various poetic forms: narrative poetry (epic, ballad, dramatic, monologue, etc.), lyric poetry (sonnet, elegy, ode etc.), and modern free verse.

E32271 Western Civilization

This course first introduces the Graeco-Roman mythological heritage and biblical legacy needed for students to understand omnipresent reference and allusion in English literature, especially from the Renaissance onwards. It then moves to an examination of the visionary and artistic impulse in the writings of such masters of Renaissance thought and culture as Erasmus, Machiavelli, Montaigne, Cervantes, Dante, Rabelais and perhaps Petrarch, (Edmund) Spenser, Shakespeare and Milton, amongst quite a few others.

E32303 Advanced Writing

Through in and out of class writing, the students in this course will practice various modes of expressive, literary, and technical writing. They will also learn how to write letters, advertisements, abstracts, CV's, newspaper headlines, questionnaires, book reviews and reports, proposals, and articles.

E32340 Syntax and Syntactic Theory

This course focuses on theory and practice in the analysis and description of modern English, emphasizing syntax.

E32343 Semantics

This course introduces students to the basic concepts in Semantics such as Reference and Sense, Sense Relations, Word Meaning, Sentence Meaning and Utterance Meaning (Pragmatics), and Propositions. Students will also be introduced to the nature of Logic and Interpersonal Meaning.

E32360 Drama

This course studies masterpieces of dramatic works from the Greek period through present times, for the purpose of understanding a dramatic structure and the social function of the dramatic art. Writers studied include Sophocles, Shakespeare, Shaw, Beckett, and Pinter, among others.

E32361 English Literature Through Late Eighteenth Century: A Survey-I

This course surveys the developments and evolutions in English literature from the sixth century until the late eighteenth century. The course traces the major literary schools and genres, the most prominent literary figures and works, and the socio-political background of the major texts.

E32362 English Literature from Late Eighteenth Century Onward: A Survey-II

This course surveys English literature from the Romantic Age to the twentieth century by looking at representative texts in various genres. The course also emphasizes the relationship between literature and its environment.

E32386 (E32331) Contrastive Linguistics

This course focuses on theory and practice in the analysis of English and Arabic contrasts, errors made by learners, and implications for foreign language teaching.

E32390 Translation I

This course aims at helping students acquire the basic skills of translation in both Arabic and English. It provides them with sufficient training in translating simple, compound, and complex sentences from English into Arabic and from Arabic into English. A variety of texts in different disciplines will be used for translation. The course focuses on problematic areas in translation from English and Arabic, particularly the differences between Arabic and English in word order, position of adjectives, noun endings, etc. The course also looks into the influence of cultural difference on translation and provides a brief introduction to translation theories.

E32414 (E32314) TEFL I

This course provides English majors with a theoretical background to a methodology for English teaching and learning. It also examines acquisition vs. learning, the use of a balanced-activities-approach to the teaching of English as a foreign language, and deals with ways in which the communicative approaches or (innovative methods) can be taught to foreign students. It is also concerned with the basic principles and techniques used in the classroom, namely, management and planning, and attitudes of teachers to students and to teaching in general.

E32420 (E32330) History of the English Language

This course studies the historical development of English, emphasizing phonological, syntactic, semantic and lexical changes.

E32459 (E32461) Literary Criticism

This course maps literary criticism from Plato to the modern age with a focus on modern critical theory. Students will closely read texts that "represent" Classical, Neo-Classical, Romantic, Modern and post-modern theory. Students will also study various modern and post-modernist critical theories, such as Mythical and Archetypal approaches, Structuralism, Deconstruction, Psychoanalysis, Marxism, Feminism, and Postcolonialism. Critical theories will also be applied to literary texts.

E32460 American Literature: A Survey

This course surveys American literature, its forms, styles, techniques, subject matter and vision, from the colonial period through the twentieth century.

E32462 Shakespeare

Shakespeare's dramatic art, along with its techniques, styles and vision, is the focus of the course. Plays of different modes will be studied.

E32490 Research Methodology

Emphasizing critical thinking, this course teaches students to write research papers on literature and linguistics. Students will practice narrowing a topic, designing questionnaires, conducting interviews, using the library, and documenting sources. Students are also introduced to aims, methods and tools of research.

Electives**A: Language and Linguistics****E32220 Oral Communication**

This course emphasizes higher level skills such as debating, giving presentations, inferencing, defending ideas, using telephone skills, etc. English for work and real-world situations is emphasized through exposing students to listening activities and through speaking.

E32223 The English Essay

A study of masterpieces by English essayists from Bacon on, for the purpose of analysis and imitation.

E32344 Schools of Linguistics

The course introduces students to the linguistic theory in general. It critically surveys the different theories in linguistics such as the Traditional (including the Arabic linguistic tradition), Historical, Structural, Functional, Firthian, and Transformational-Generative theories.

E32439 Computational Linguistics

This course introduces students of the English language to general ideas about computers. Students will learn about the function of computers in the rapidly-expanding world of hi-tech information technologies. It will help them use computers to analyze and treat linguistic problems in such areas as translation, teaching, and data base and dictionary making.

E32440 Applied Linguistics

This course aims at providing theoretical bases for certain pedagogical procedures, philosophies and techniques. In other words, the findings of theoretical linguistics are applied in matters like foreign language teaching, speech therapy and so on. Language as a means of communication is viewed with respect to the social setting in which that language is used, so sociolinguistics and language variation are major topics here. Moreover, pragmatics constitutes another major area in this course.

E32441 Sociolinguistics

This course studies the role and function of language in society and of language variation, introducing notions such as standard and nonstandard varieties, idiolect and dialect, bilingualism and diglossia, pidginization and creolization, and language policy and planning.

E32442 Psycholinguistics

This course studies the relationship between language and the mind, dealing with perception, processing, and learning of language, and language acquisition universals.

E32443 Discourse Analysis

This course introduces the students to the concept of discourse adopted by modern linguists as an alternative to the traditional unit of analysis, the isolated sentence. Thus, the course deals with the contextual features surrounding the communicative act, namely, the speaker/writer, the listener/reader and the topic. The issues to be addressed are the theme/rheme assignment, the address terms, the familiar and formal levels of language use in addition to the distinct features of religious, political feminist or sexist and leftist discourse. Samples of the spoken and written discourse are also presented for analysis to guide students to write in both modes.

E32447 (E32315) TEFL II

This course exposes students to theories of accuracy and fluency which enable them to select learning activities and methods of teaching at the beginning, intermediate and advanced levels. The course is primarily concerned with preparation of lessons, practical teaching, implementing lesson plans, delivery observation, analysis as well as evaluation and discussion of micro-teaching.

E32450 Special Topic in Linguistics

This course focuses on any issue in linguistics which the instructor sees significant.

E32491 Translation II

This course emphasizes translation of business and publicity materials, including practice in simultaneous translation.

B. Literature**E32331 Autobiography**

This course addresses autobiography as a genre in both British and American Literatures. Autobiography as an independent genre, therefore, is to be distinguished from the general autobiographical impulse that virtually many works of literature integrate. Simulated autobiography, however, is a popular device in fiction and some novels on occasion can be autobiography in the guise of fiction. An ambitious syllabus of this course may trace autobiography to its roots; Saint Augustine is considered the first biographer in English Literature and Benjamin Franklin is the father of American auto-biography. In 20th Century Literature, the art of autobiography gained momentum; there is an increased interest in the lives of celebrities and a genuine interest in the making of self-made men

and women. It is always possible to compile a list of autobiographies that can be a chronological representation of the development of autobiography as a genre and of the different themes, devices and features of autobiography as an art. Students are encouraged to read as many autobiographies as possible and to examine the common features of this genre with a critical eye on its different aspects.

E32373 The Romantic Age

The topic of this course is the counter-revolt in aesthetics and vision of the late eighteenth and nineteenth centuries. Emphasis falls on poetry. The student is to read and analyze representative poems by Wordsworth, Coleridge, Shelley, Keats and Byron. The student will also be exposed to Romantic thought in other genres.

E32377 The Development of the Novel (3 Cr. hrs.; Prereq. E32261)

This course traces the historical development of English and American novels from the 18th century to the present. The novel as a genre is a substantial part of this course; novel types, techniques and elements are explored. In preparing a syllabus for this course, instructors may choose to include representative novels of each age and each type. Whereas a quick look at the novels of the C18th may suffice, 19th and 20th Century novels would be the concern of the course.

The novels of Defoe, Richardson, Fielding, Smollett, Sterne and Goldsmith stand at the source of the English novel, but the 19th Century saw the flowering of the English and American novel. Austen, Scott, Dickens, Thackeray, Hardy and Eliot created great fictional domains loaded with social types and melodramatic plots. In America, Cooper, Hawthorne, Melville, Howells, James are the pioneers and the makers of the great American masterpieces in fiction. In the twentieth century, novelists both in Britain and America probed deeply in the human mind offering new techniques and trends in fiction. The stream of consciousness technique was the major contribution of Virginia Woolf, James Joyce and William Faulkner.

E32378 Eighteenth-Century English Literature Excluding the Novel

This course covers a wide range of the poetry, prose and drama of the England of the 18th century literature. Studies include verse and prose, essays, journals, biographies, pamphlets, letters and periodical articles. Insights into the philosophical and literary impulses of the times, and the political, religious and social changes, that ushered in the Age of Reason, are provided through close readings of works by Hume, Chesterfield, Goldsmith, Swift, Pope, (Dr.) Johnson, Boswell and Sheridan, amongst quite a few others.

E32379 The Victorian Age

The course covers Romantic poetry in its decay, premodern and decadent poetry of the 1880s and '90s, Victorian thought and some representative fiction. Tennyson, Arnold, Carlyle, the Brownings, Rossetti, Swinburne, Dickens, (George) Eliot, Pater, Thackeray, Ruskin, Mill and Morris are, amongst others, the major writers to be dealt with in the course.

E32476 World Literature

This is a "Great Books" course that introduces the student to multi-genre world texts for the purpose of analysis, evaluation, and comparison and contrast.

E32477 Twentieth-Century British Literature

The course first introduces students to the socio-politico-intellectual background out of which modern British literature emerged, to the aesthetics that govern its artistic output, and the evolutions in critical theory and techniques that have been shaping British literature since WWII. Students then study, and evaluate, multi-genre masterpieces by trend-setting authors.

E32478 C20th American Literature

C20th American Literature is a readings course which aims at introducing some major 20th Century American writers in the major genres: poetry, fiction, drama, biography and autobiography. The following writers are common choices in almost all syllabi: Robinson, Frost, Pound, Eliot, Cummings, Stevens, Williams, Lowell, Sexton, Plath, Hemingway, Faulkner, Steinbeck, Wright, Hughes, Ellison, Bellow, O'Neill, Tennessee Williams, Albee and Baraka. Further, C20th Literature, especially the contemporary part, is marked with a mosaic of multiculturalism and ethnicity. Instructors may choose to include some ethnic writers including the Afro-American group. In studying works by 20th century writers, students are encouraged to look for the general C20th motifs, movements, impulses and trends that are uniquely modern.

E32479 Post-Colonial Literature

This course introduces students to the new and influential field of postcolonial studies, focusing on post-colonial writers from Africa, India, the Caribbean, and the Middle East who, through their writings, engaged with their countries' colonial heritage on many levels. It also highlights these writers' response to the ways English literature served and/or contested the British Empire's colonial project (in texts, by such authors as Defoe, (Charlotte) Bronte, Hardy, Kipling, Conrad and J. M. Coetzee, and to colonialism, in general. Readings include novels, short stories, poetry, and essays by such writers as Chinua Achebe, Jean Rhys, Derek Walcott, Jamaica Kincaid and Kamala Markandaya. In addition, students will read some of the most important theoreticians of the field such as Frantz Fanon, Edward Said and Ngugi wa Thiongo. Among the key issues and themes that will be examined in detail are representations of the Other, language, history, identity, hybridity, intertextuality, and place and displacement.

E32480 Special Topic in Literature

This course is focused on any literary figure, movement, or issue deemed significant by the instructor.

E32483 Studies in an English Literary Movement

This course aims at acquainting students with the sequence and nature of the literary movements across ages. The neoclassical movement of the 18th Century is a possible point of departure. The 19th century opens with the optimistic romantic movement, followed by the less optimistic realism of the second half, only to close with the pessimistic determinism of the naturalism of the last decade. The 20th Century opens with, and passes through, the two major wars leaving little hope for optimism; the pessimism of the last decade of the 19th Century is pushed to its limits leading writers to the domains of the alienation and nothingness of the existential movement and the consequent absurdism of the second half of the century. The literary movements of the 20th century, however, are so diversified to allow for the easy labeling of the previous centuries. Surrealism, modernism, post-modernism, socialism, imagism, symbolism and feminism are among the literary movements and concepts that twentieth century produced and promoted. Students, therefore, are expected to read works that are representative of some of these movements and to examine the common features and the manifestation of these features in the assigned works.

E32484 Comparative Literature

This course introduces students to different theories of comparative literature and gives them a chance to compare aspects of English and Arabic literary traditions. Using both a cognitive/cultural approach and a historical/contextual approach, students will trace the similarities and differences between these literary traditions. They will also deal with the issue of influence or impact, examining how one tradition borrows from, or reacts, to another.

E32492 Language and Literature

The main topic of this course is the use of linguistic tools, models, approaches (including discourse analysis) in the understanding and analysis of literature, and the application of such methodology to the analysis and evaluation of selected literary texts.

ECONOMICS MINOR***E32295 Business English**

This course is intended for people who need to use English in their work. It is also useful for senior students who plan to work in the business field upon graduation. The course emphasizes English in business contexts using a wide range of business settings and situations. It focuses on all skills: reading, listening, speaking, and writing by encouraging students to participate in discussion, problem-solving and role-playing.

E32304 Media English

This course is intended for people who need to use English in their media-related work. It is also useful for senior students who plan to work in journalism, radio, television, and film upon graduation. The course emphasizes oral and written English for different media situations. Students will learn to conduct different kinds of interviews and to write journalistic articles, newsletters, scripts, and radio and television broadcasts.

E32410 Project Planning and Design

This course is designed to help students learn the basic principles of writing proposals. The first component of the course includes familiarizing students with filling out application forms and writing CVs. In addition, students learn to understand project rationale, budget, objectives and the form of the project statement. The second component of the course explores methodology, project results and evaluation. The third component is devoted to studying model projects.

E32398 Computer and Informatics

This course explains a new way to synthesize ideas about information systems. It teaches students to recognize, describe, analyze, and design information systems professionally. Students will learn to understand, control, and then process information by computer.

The other courses of this plan are part of the English Dept. curriculum plan.

FACULTY MEMBERS

Full Professors

Rami al-Hamdallah

Ph.D. in Applied Linguistics,
University of Lancaster, U.K., 1988.

Associate Professors

Abdallah Salhab

Ph.D. in General Linguistics,
The University of Nebraska at Lincoln, Neb.,
U.S.A., 1986.

Assistant Professors

Odeh Odeh

Ph.D. in British Literature,
University of Southern Illinois at Carbondale,
U.S.A., 1981.

Nabil Alawi

Ph.D. in 19th Century American Literature,
University of Tennessee at Knoxville, U.S.A., 1990.

Ruqqayya Herzallah

Ph.D. in Theoretical Linguistics,
University of Cornell, U.S.A., 1990.

Lecturers

Fathallah Halaweh

M.A. in British Literature, New York State University at Binghamton, U.S.A., 1980.

Instructors

Mary Fattash

M.A. in English Literature,
Aligarh Muslim University, India, 1980.

Muna Thaher

M.A. in TESOL,
Arizona State University, Tempe, U.S.A., 1987.

Sameer Mahmoud

M.A. in British and American Literatures,

Wafa' Abu Shmeis	Michigan State University, Lansing, U.S.A., 1988. M.A. in TEFL, University of Southern Illinois at Carbondale, Carbondale, U.S.A., 1985.
Ekremah Shehab	M.A. in Translation, Yarmouk University, Irbid, Jordan, 1997.
Abdel Jabbar al-Khalilee	M.A. in Translation & Linguistics, University of Bath, U.K., 1985.
Faridah al-Asmar Fatayer	M.A. in Teaching English as a Second Language, Queens College of the City University of New York, U.S.A., 1983.
Abdel Karim Daraghmeh	M.A. in English Literature and Criticism, Yarmouk University, Irbid, Jordan, 1996. (on leave)
Reema Bustami	M.A. in English Teaching Methods, An-Najah National University, Nablus, Palestine, 1999.
Abd Al-Rahman Qa'dan	M.A. in English Language and Literature, Northampton University, UK, 2002
Eyman Hammad	M.A. in English Literature, Jordan University, Jordan, 1994

DEPARTMENT OF HISTORY

Admission requirements:

A student wishing to major in history must complete History of Modern Thought 33111 and History of Islamic Civilization 33113, with a minimum of 70% in each.

1. Requirements for a B.A. degree in History

Students wishing to obtain a B.A. in this specialization must successfully complete 131 credit hours: 23 university courses, 27 college, 75 department (45 as compulsory and 30 as elective), in addition to "free" requirements.

1A. Compulsory courses (45 credit hours)

Course #	Course title	Credit hours
33211	History of Ancient East	3
33212	Pre-Islamic History of the Arabian Peninsula	3
33213	History of Early Islam (Prophet's and Guided Caliphs' Era)	3
33214	History of Umayyad Caliphate	3
33215	History of Abbasid Caliphate	3
33311	History of Maghreb and Andalus	3
33312	Methodology in Historical Research	3
33313	History of Europe in Medieval Ages	3
33314	History of Ayyubids and Mamlukes	3
33315	History of Ottoman Caliphate	3
33411	History of Modern World	3
33412	Modern Arab History	3
33413	Modern History of Palestine	3
33414	Contemporary History of the World	3
33415	Contemporary History of Arabs	3

1B. Elective courses (30 credit hours)

Course #	Course title	Credit hours
33221	History of Greeks and Romans	3
33222	Pre-Islamic Religions in Arabian Peninsula	3
33223	History of Byzantium State	3
33224	Islamic Conquest Movement	3
33225	History of Fatimid State	3
33226	Seljuk History	3
33331	Study in Sources	3
33332	Islamic Political Thought	3

33333	Islamic Sects	3
33334	Special Topic in History of Andalus / Civilization	3
33335	Special Topic in History of Jerusalem	3
33336	Special Topic in History of Islamic Civilization	3
33341	Franks' Invasion	3
33342	History of European Renaissance Age	3
33344	History of the United States of America	3
33344	Jews in Modern Ages	3
33461	Modern and Contemporary History of Iran	3
33462	Arab Country During Ottoman Era	3
33463	Egypt During Mohammed Ali's Family Era	3
33464	Political Parties in the Arab World	3
33465	Contemporary Issues	3
73227	Methods of Teaching History (from College of Education)	3

Course descriptions

HIS33211 History of Ancient East

This course aims at studying the development of human life in the Ancient Near East region since the Old Stone Age up to late historical eras. The Ancient Near East will be studied from political, cultural and intellectual aspects: Instruments, writing systems, architecture, arts, religions. This course will focus on the history of Ancient East countries, namely, Iraq, Egypt and Syria. The course also examines the effects of these civilizations on Man's history.

HIS33212 Pre-Islamic History of Arabian Peninsula

This course highlights the study of the sources related to Jahili and Arabian Peninsula history before Islam, Arab classes, geography of Arab lands, Yemen's old states, and the remaining states in the Arabian Peninsula before Islam: Qinda, Palmyra, Nabateans, Ghassasans, and Manathiras, and the tribal society in Hijjaz from all aspects.

HIS33213 History of Early Islam (the Prophet's and Guided Caliphs' Era)

This course examines the call for Islam, its spread in Mecca and Medina, organization of the Muslims' state during the Prophet's lifetime, the Prophet's policy in spreading the Islamic call inside and outside the Hijjaz, apostasy and self-prophecy claim movements, the issue of the Prophet's succession, conquests during the Guided Caliphs' times, organizations of state governing administration, financially, religiously and militarily, as well as disagreements which had emerged and their consequences.

HIS33214 History of Umayyad Caliphate

This course highlights a number of topics: establishment of the Umayyad dynasty, development of caliphate system during the Umayyad period, the Umayyads' policy in fostering their authority, the Umayyads' position towards the Islamic sects, namely, al-Khawarij and the Shiites; the Mawali movements, Islamic conquests during the Umayyad caliphs' times, government and administrative systems, and characteristics of civilization during the rule of the Umayyad period.

HIS33215 History of Abbassid Caliphate

This course investigates the organization of da'wa (call) for House of the Prophet, establishment of the Abbassid caliphate. In addition, the course is a brief study of caliphs in the first Abbassid age, Abbassid caliphs' home policy toward the Alawis, Mawalis, Shu'biyyah, Baramika, the Arabs, ... etc. The course also looks at Abbassids' foreign policy towards the Byzantine and Holy Roman empires, the Maghreb and Andalus, ... etc. It will also shed light on the emergence of semi-independent Muslim states, age of Turks' dominance, systems of government, and aspects of civilization during the Abbassid caliphs.

HIS33221 History of the Greeks and Romans

Topics covered in this course are the following: significance of Greek history, Greek heritage in the Islamic Arab civilization, and the Greek legacy to modern European civilization, origin of the Greeks and their migrations, Spartan states' importance in Athens' history, Greek-Persian wars, emergence of the city of Rome, Rome during the Monarchy period, Romans' systems during Republican period, Booniyan wars, and the empire rule.

HIS33222 Pre-Islamic Religions in Arabian Peninsula

This course is a study of the relationships between religions of the Arabian Peninsula, with religions in other surrounding regions such as South Asia, Greater Syria, Egypt and Iraq. It also dwells on idolators' religions (such as worship of idols, celestial stars) magi-an, idolators' ritual rites. The course also deals with monotheistic religions, Christianity and Judaism and their relationship with Byzantium, and Sasaan's desires to control the lands of the Arabs, al-Hannfiyy al-Ibrahimiyyah, pilgrimage system and emergence of Islam, sources and references on religions before Islam.

HIS33223 History of Byzantium State

Topics covered in this course include sources of history on the Byzantium state, preliminary study of the establishment of the Byzantium state, its internal policy, Jesuit's legislations, disorders, chaos, religious activity, feudalism problem, foreign relations with Seljuks, Bulgarians, Franks, and the Ottomans, collapse of the empire, rule of government and aspects of civilization.

HIS 33224 Islamic Conquest Movement

This course investigates the objectives that the Islamic movement came up with and sought to achieve: political and religious unification of the Arabian Peninsula, and the introduction of Islam abroad. The course also raises the concept of the holy war movement in Islamic thought, reasons behind conquests, their organization, their modes of action and their results. The course also considers orientalist's interpretation of these conquests. The course also offers some sources and references on Islamic conquest movements.

HIS33225 History of Fatimid State

This is a preliminary study of the organization of the Ismailite call, establishment of the caliphate in the Maghreb region, the movement of the Fatimid caliphate to Egypt, political, religious movements, foreign and home policies, age of vassals' power/influence, collapse of Fatimid caliphate, systems of government and aspects of civilization during the Fatimid state.

HIS33226 Seljuk History

This is a study of the state of the Muslim World before the emergence of the Seljuks, establishment of Seljuk dynasty, Seljuks' control of Iran, Iraq and Greater Syria, Seljuks' internal disputes, division of their dynasty, systems of government and aspects of civilization during the Seljuki age.

HIS33311 History of Maghreb and Andalus

This course tackles the state of affairs in the Maghreb before the Islamic conquest, stages of Islamic conquest of the Maghreb, life in the Maghreb during the Umayyads' and Abbassids' periods, independent states in the Maghreb, conditions in Spain before Islamic conquest, eras of Islamic state in Andalus, Spanish Christian states, systems of government, and aspects of civilization in the Maghreb and Andalus.

HIS33312 Methodology in Historical Research

This course aims at studying the meaning of history, and conditions that make a historian researcher. The course also investigates the criteria used for choosing a scientific topic, the ways of collecting historical information and its criticism, the manner of proving historical facts, their arrangement, expressing opinions, clarification, editing and presentation. The course also aims at training students on how to write research papers and to discuss them in full harmony with the theoretical knowledge they have taken in the course.

HIS33313 History of Europe in the Medieval Ages

This course is a study of the history of the Roman empire, the Barbaric invasions and the establishment of German ministates, spread of Christianity in Europe, emergence of the church/monastery movement, the Normans and their role in the course of historical events.

HIS33314 History of Ayyubids and Mamlukes

This course aims at identifying the sources and references on the history of the Ayyubids and the Mamlukes, the conditions of life in the Muslim East before the establishment of the Ayyubid state in Iraq, Greater Syria and Egypt. It also dwells on internal policy, Moguls' and Franks' dangers, the Ayyubids' foreign relations with some Muslim countries, economic life (agriculture, industry and trade) feudalism in all its forms, systems of government, and aspects of civilization.

HIS33315 History of Ottoman Caliphate

This course aims at identifying the manner of the establishment of the Ottoman caliphate, and the key institutions: Sultanate, the Sublime Porte, Daftar Khana (public records office), a-Daftar Daryah, inkishariyya (janizaries), Islam ulema (scholars), judiciary system. The course also examines Ottoman-Safawi relations, Ottoman-Mamluke relations, and Ottoman-European relations before the signing of the Kojac treaty.

HIS33331 Study in Sources

This is a study of historical Arab sources of different periods. The course highlights the sources of history of the Arabs before Islam. It also explains the beginning of history writings and the impact of Islam in their emergence. The course, moreover, investigates historical sources belonging to senior historians from the 3rd-9th centuries of Hijri. The course also aims at training students on how to read selected texts, extracted from these sources. Students will learn how to analyze, and interpret them from historical, intellectual and methodological perspectives. They will also be introduced to historians' and narrators' methods and their purposes in writing history and the factors surrounding their writing.

HIS33332 Islamic Political Thought

This course introduces sources and references on political Islamic thought. The course is also a preliminary study of all aspects of thought among Arabs before Islam. It is also a brief study of thoughts of peoples neighboring the Arabs such as the Persians. Detailed study of some aspects of political, economic, social, military and religious Islamic thought will also be considered. The course will hold a comparison between Islamic thought and some contemporary peoples' thoughts at the time. At the end, the course will highlight characteristics of Islamic thought and ways of dealing with religion.

HIS33333 Islamic Sects (Parties)

This course aims at studying social, economic and intellectual and political developments that had accompanied the establishment of the state of Islam. The course also focuses on the division of the Umma (nation) among itself in the events of the First Fitna (internal fighting) between 30-40 Hijra. The course also sheds light on the crystallization of the notion of state (Ahla al-Jama'a) the emergence of sects or political or religious oppositions of al-Khwarj, Shiites, Qadariyyah, al-Mu'tazilah, etc... In this respect, the course will show the opposition parties' opinions towards economic, social and political issues and the state's position towards these opinions. The students will be introduced to sources and references on Islamic sects.

HIS33334 Special Topic in History of Andalus or Civilization

This course introduces sources, and references pertinent to subject of the study. This is a detailed in-depth study of a specific topic related to history of Andalus or its culture. Topics may include Andalusian society, economic, social, intellectual life, the Spanish inquisition war, history of the Spanish kingdom, one aspect of the Andalusian civilization, foreign relations, internal policy. It might be also a detailed and analytical study of a specific period of time from all aspects.

HIS33335 Special Topic in History of Jerusalem

This is a study of history of Jerusalem during various historical eras: Bronze Age (3000-1000 B.C.), and from 1000-63 B.C., Jerusalem under rule of Rome and Byzantium (63B.C. 637 A.D.), during the first Islamic period from the 7th-11th centuries, under the rule of the Franks from 1099-1187 A.D., Jerusalem under the rule of the Ayyubids, the Mamlukes from 1187-1516; under the Turkish Ottomans' rule from 1516-1831 and during the 19th century from 1831-1917. The course will also survey the state of affairs in Jerusalem from 1917 to the present.

HIS33336 Special Topic in History of Islamic Civilization

This course highlights one specific aspect in the history of Islamic civilization. There will be an in-depth study, for example, of intellectual, scientific, social or political aspects of the civilization.

HIS33334 1 The Franks' Invasion

This course begins with an introduction to sources and references pertinent to the Franks. The course provides a brief, preliminary study of the relations between Muslims and Western Europe, since the emergence of Islam. Other issues covered in this course include conditions of life in Muslim East, and in European countries prior to the Franks' invasion, Franks' expeditions, their courses, motivations, nature, objectives, moves and events, Franks' emirates in the Arab countries, Muslims' awakening and their role in liberation of their lands and the expulsion of the Franks. Lastly, the course concludes by discussing the results and cultural influences on Europe.

IS 33342 History of the European Renaissance Age

This course introduces sources and references on European Renaissance, the meaning of the term, the causes of Renaissance, its characteristics, and its economic, religious and political aspects.

HIS33343 History of the United States of America

This course aims at introducing sources and references pertinent to history of America. It will provide a comprehensive overview of North America, Caribbean countries, South (Latin) America, discovery of the New World, European colonialism, America's War of Independence, and the independence of South America's countries.

HIS33344 Jews in Modern Ages

This course aims at introducing sources and references pertinent to the Jews. It also gives a brief preliminary study of ancient Jewish history and modern history of the Jews. It examines history of the Jews in Europe since the Renaissance Age in all aspects: political, economic, social, and scientific. The course also studies history and activity of Jews in America, circumstances and factors that brought about Zionist ideology. Students will study in detail the Zionist movement and activities in terms of Western countries' cooperation with the Jews in establishing a "national homeland" for them in Palestine. Included is the Arab and Islamic countries' position towards this.

HIS33361 Modern and Contemporary History of Iran (1500-1980)

Topics covered in this course are the following: establishment of the Safawi state, nature of expansionist and religious struggle between the Safawis and the Ottomans, superpower countries' interests in the strategic location of Iran during the 19th century. These countries were mainly France, Russia and England; Iran during the First and the Second World wars, Iran during the Bahlawi dynasty and the roots of the Iraqi-Iranian border dispute.

HIS33411 History of the Modern World

This course is a study of western cultural landmarks starting from the European Renaissance age up to the outbreak of the First World War, the French and American revolutions, the emergence of the Industrial Revolution in Europe and European national movements.

HIS33412 History of Modern Arabs

This course covers the Ottomans' conquest of Arab countries, a quick general glimpse of these countries until the late 18th century. The course is also an intensive study of the 19th century and its major characteristics at the international, Ottoman, and Arab levels and the European domination of the Arab countries until the early events of the First World War.

HIS33413 History of Modern Palestine

This course is a study of Palestinian history from the beginning of the First World War, and the conditions of Palestinian society during the First World War. The course traces political events that resulted in the emergence of Palestine as a geopolitical entity, the British political drive and its alliance with Zionist plots in Palestine. The course covers both political and non-political events which affected modern Palestinian history until the end of the Second World War.

HIS33414 Contemporary World History

This course is a study of 20th century events including the events of the Second World War, the emergence of Western and Eastern blocs, the non-aligned bloc, international crises and a follow-up of current events at the international level.

HIS33415 Contemporary Arab History

This course covers the history of the Arab World from the early 20th century to the Second World War, taking into consideration political, social, economic and intellectual dimensions. The course emphasizes Second World War events, their effect on the Arab World, liberation movements in the Arab World and the impact of international events and blocs on Arab solidarity.

HIS33462 Arab Country in the Ottoman Era

This is an in-depth and detailed study of an Arab country such as Syria, Palestine, Lebanon, Egypt or the Arabian Peninsula. The study tackles characteristics of Ottoman administration and its development, the Ottoman's military, security, judiciary and financial apparatuses.

HIS33463 Egypt During Mohammed Ali's Family Era

This course is a study of conditions and factors which had led to Mohammed Ali's takeover of power in Egypt, Mohammed Ali's internal policy, his reformation and revival of state, his relations with the Mamlukes as well as the Azhar ulema (religious scholars), and the Egyptian people. The course also dwells on his foreign policy (expansion), his relations with the Ottoman empire and with the European countries; Mohammed Ali's successors in Egypt and their internal and external policies, foreign influence in Egypt, British occupation of Egypt in 1882; Egyptian people's struggle, the Palace's policy and the political parties and the events leading to the 1952 Revolution of the Free Officers.

HIS33459 Contemporary Issues

This course examines one or more than one contemporary issue such as the intifada, the first and second Gulf wars, Arab-Israel peace agreements. The course discusses their historical roots, and political, social and economic effects.

HIS33464 Political Parties in the Arab World

This course is a study of conditions in the Arab World at the end of the Ottoman empire, the emergence of political parties, factors and reasons behind them, effect of European thought, principles, objectives, ways and methods, practices and achievements. The course is also a comparative study of political, religious and military parties, impact of these parties on Arab peoples in all aspects, Arab countries' attitudes and political regimes' positions towards them.

FACULTY MEMBERS

Full Professors:

Bahjat Sabri

Ph.D. in Modern and Contemporary Arab History, Ein Shams University, Ein Shams, Egypt, 1979.

Associate Professors:

Jamal Judeh

Ph.D. in Islamic Economic and Social History, University of Tubingen, Germany, 1983.

Taiseer Jbara

Ph.D. in Arab History and Modern and

Nitham Abbassi	Contemporary World History, University of New York, USA, 1986. Ph.D. in Arab History and Modern and Contemporary World History, Frieberg University, Germany, 1981.
Hisham Abu Rmeileh	Ph.D. in Islamic Andalusian History, University of Cairo, Cairo, Egypt, 1979.
Assistant Professors: Adnan Milhem	Ph.D. in Islamic History: Islamic Historical Methodology, University of Jordan, Amman, Jordan, 1996.
Lecturers: Musa Abu Dayeh	M.A. in Modern Arab History, University of Jordan, Amman, Jordan 1979.

DEPARTMENT OF GEOGRAPHY

Admission requirements

1. To be admitted into the Geography major, a student must complete Human Geography 34112 and Physical Geography 34113 with a minimum standing of 70% in each.
2. If the number of students qualified to major in Geography is above the limit, then only those with the highest averages will be admitted.

1. Undergraduate requirements for a B.A. degree in Geography

The Department of Geography offers a single specialization in Geography, and students wishing to obtain a B.A. degree in Geography must complete 131 credit hours successfully. These requirements include university, college and department compulsory and elective courses in addition to "free" courses carrying six credits.

1A. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
34211	Principles of Maps and Surveying	3	-
34213	Principles of Climate	3	-
34214	Principles of Geology	3	-
34215	Principles of Geomorphology	3	34213, 34214
34217	Principles of Statistics	3	-
34311	Methods of Cartographic Representation	3	34211
34312	Principles of Demography	3	-
34313	Agricultural Geography	3	34213
34314	Water Resources Geography	3	34214, 34213
34315	Urban Geography	3	-
34411	Geography of Industry	3	-
34412	Transport Geography	3	-
34413	Regional Planning	3	-
34414	Geography of Arid Land	3	34213, 34215
34415	Research and Thesis Seminar	3	-
34230	Introduction to Aerial Photo Analysis	3	34211
34421	Population Geography	3	34212

1B. Elective courses (24 Credits)

Course #	Course title	Credit hours	Prerequisite
34221	Climate and Plant Geography	3	34213
34222	Ancient World Geography	3	-
34223	Environment Preservation	3	-
34225	Geography of the Arab World	3	-
34317	Principles of Rock Formation	3	34214
34321	Geography of the Muslim World	3	-

34322	Geomorphological Studies	3	34215
34323	Geography of New World	3	-
34324	Biogeography	3	34221
34325	Soil Geography	3	34215
34327	Tourism Geography	3	-
34422	Study and Analysis of Maps	3	34311
34423	Geopolitics	3	-
34425	Remote Sensing	3	-
34425	Methods of Demographic Analysis	3	-
34216	Geographical Texts in English	3	-
34326	Geographical Field Studies		-

Course descriptions

GEO34211 Principles of Maps and Surveying

Topics covered in the course include principles of map drawing, cartographic symbols used in maps, instruments used in map drawing, technical and mathematical methods used in making projections, methods of land survey, creation of projections, spaces on maps, nature, familiarity with equipment used in various surveying operations in addition to ways of elevating a natural area on a map or a physical plan.

GEO34213 Principles of Climate

This course begins with a definition of climatology, and relationship between climatology and meteorology, atmosphere in terms of structure and its effect on controlling earth environment, study of climate elements (sun rays, heat, winds, air pressure, moisture, precipitation, rain, clouds, mist) and general foundation on which international climate classifications are based.

GEO34214 Principles of Geology

This course covers formation and structure of earth, topography or elevation (relief) generating movements, external factors influencing the external surface of earth.

GEO34215 Principles of Geomorphology

This course covers topics such as forms of earth surface in terms of their description, distribution, development, interpretation of their origin. The course also discusses the earth geological structure, and the geomorphological process. In addition, the course introduces pillars and basic concept of geomorphology, and highlights role of geomorphological processes and factors which are attributed to structural factors: volcanic, and geomorphological changes resulting from external processes such as land-sliding, coastal, and karstic factors.

GEO34217 Principles of Statistics

This course introduces a number of topics: measurements of central speed, and dispersion, natural distribution, coefficient correlation, regression coefficient, sampling theory and statistical significance.

GEO34222 Ancient World Geography (Euroasia)

This course is a study of regional geography in Asia and Europe.

1. Europe: geographical location, structure and elevations, climate regions, population, economic activity (agriculture in all its forms) mining and industry. Two countries are taught as cases in point.

2. Asia: geographical location, structure and elevation, climate regions, natural plants, deserts, population, agricultural crafts, mining industry and industrial regions, Mediterranean Sea Basin, including a comprehensive description of Mediterranean region.

GEO34223 Environment Preservation

This course investigates the relationship between man and his old and present environment and the mutual influence of both. The course also surveys old and modern schools concerning this mutual relationship and the subsequent problems resulting from this interaction especially in the age of technology which has resulted in very dangerous problems and has created an imbalance in the environment. These problems can be seen in pollution in all its types, production, food distribution, draining of resources, & desertification. These problems will be studied in terms of their causes and effects and possible solutions. There is also an emphasis on the importance of proper scientific planning to maintain environmental balance for the sake of man's life on this planet.

GEO34216 Geographical Texts in English

This course is a study of geographical subjects in English. These subjects are human, physical and economic geography. Topics covered are not taught in the four-year curriculum plan of the department. The course aims at helping students acquire English technical terms used in geography.

GEO34225 Geography of the Arab World

This course is a comprehensive regional geographical study of the Arab World. This will be followed by detailed studies of some Arab countries.

GEO34230 Introduction to Aerial Photoanalysis

This is a study of aerial photos in terms of types, engineering and light features, analysis of aerial photos by using optical equipment, map designing and land uses.

GEO34311 Methods of Cartographic Representation

This course introduces methods of cartographic representation, and techniques used in making distribution maps, namely, the transformation of different figures and statistics to specialized maps. Students are introduced to technical methods used in building this type of maps, technical problems that face cartographers when using these methods, ways of overcoming them by using some mathematical and statistical methods.

GEO34312 Principles of Demography

This is a study of different population theories and policies, sources of demographic and urban data, mortality, migration and its rates, and factors influencing them.

GEO34313 Agricultural Geography

This course focuses on the analysis of significance and status of agricultural geography, physical circumstances influencing agriculture as an independent science, its relationship with human environment, social and economic factors and their impact on the development of agriculture, agricultural systems in the world, the most important foundations and methods followed in field studies.

GEO34314 Water Resources Geography

Topics covered, in this course, include cycle of natural water, its basic elements, particularly amount of rainfall, evaporation, precipitation, water leakage in soil, underground water, rivers and lakes, seas and oceans in terms of scarcity, abundance and properties, changes in time and place, utilization, development and preservation of these resources as well as the existing relationships between them and man.

GEO34315 Urban Geography

This course is a study of urban and rural housing patterns and characteristics, city planning, patterns of land use, and major city problems.

GEO34221 Climate and Plant Geography

This is a quantitative applied study of climate elements, most important systems used in different scientific and practical situations such as heat, dryness and moisture coefficients, water balance, sun ray balances, identifying movement of winds and its quantitative representation, studies on weather forecasts and conditions and their representation on weather boards.

GEO34317 Principles of Rock Formation

This course studies earth surface, rocks, their types, their distribution and their identification.

GEO34321 Geography of the Muslim World

This is a regional but brief study of the Muslim World. It sheds light on the importance of its location and its strategic dimension for its natural unity. Emphasis will be given to physical circumstances, geological structure, climate, biosphere, human conditions, type of economic activity, and their reflections on social conditions. The course also covers the possibility and potentials of unity on the basis of belief and location circumstances. Two political case studies will be considered : one from the Arab World and another from outside the Arab World.

GEO34322 Geomorphological Studies

This course investigates geomorphological phenomena and capitalizes on students' knowledge taken in Geography 34215 which tackled geomorphological processes in terms of analysis, description and classification. The course also dwells on mechanical engraving processes because of geomorphological phenomena in arid, dry areas represented in desert forms. It also examines draining network, river floors and coastal forms in both mild and hot weather areas. This is in addition to ice forms in cold areas, karstic erosion/weathering as a result of chemical dissolution and its variations according

to climates and different rocks. The course, finally, highlights the significance of geomorphological study and the possibility of its contribution to the preparation of engineering projects, economic geology and military purposes.

GEO34323 Geography of New World

Topics covered in this course include history of discovering North America, its structure and elevation, climate and climate regions, natural plants, soil divisions, population and its distribution, economic activity, agriculture and patterns of agricultural use, mining and areas of its concentration, industry and trade. There will be a detailed study of Canada : human and physical aspects. Study of South America will cover location, structure, elevations, climate, climate regions, natural plants, forests, grass, provinces and extension of the continents, population and its different structures, economic activity, agriculture, pasture, rainfall agriculture, irrigated agriculture, mining and industry. Brazil and Chile, two case studies, will be studied in detail in terms of human and physical aspects : population and economic activity.

GEO34324 Biogeography

This course aims at emphasizing the need to protect and maintain environmental elements from factors of destruction and deterioration. This course will examine spatial distribution of flora and fauna life on the surface of the earth, factors that have led to diversity and variation in spatial patterns, geographical approach, nature of biogeography, bases of animal and plant classification, the most important classifications, factors controlling the distribution of plant cover, major plant and animal groupings. Finally, the course will look at natural plants and wild animals, and aquatic animals such as fish.

GEO34325 Soil Geography

This course covers a number of topics : Soil and its components, factors of its formation, its major classifications, and distribution in the world, the effect of all this on the picture of the distribution of natural plant cover and agricultural produce in particular.

GEO34326 Geographical Field Studies

This course aims at introducing geographical phenomena, their monitoring and field observation through field studies and trips.

GEO34411 Geography of Industry

This course examines industry in terms of geographical, economic, historical and political perspectives, regional distribution of industry, industrial system and its development, patterns of industrial distribution, industrial production at the regional and international levels, factors influencing it, theory of industrial location and strategic goals for development planning.

GEO34412 Transport Geography

This course examines a number of topics: transportation and travel, development of transportation system and its influence by human and physical factors, types of ground, sea and air transportation, means of transportation and their development up to the present. It also investigates the extent of their reaction to natural environment they are

used in and their effect on national and world economies.

GEO34413 Regional Planning

This course highlights the relationship between planning and geography, factors influencing planning, study of types of planning: Agricultural, industrial ... etc. It also introduces patterns of planning in countries that have different social systems and methods of classifying regions within each area of study.

GEO34414 Geography of Arid Land

Students, in this course, will be introduced to location of arid regions, their climate, morphological and vital circumstances, resources of natural wealth, water resources and their influence on human systems: economic and social spheres. The course also examines problems of the environment, such as desertification, salinity, soil erosion and pollution, and the most important solutions possible to solve environment problems and future aspirations to develop and create a sustainable environment.

GEO34415 Research and Thesis Seminar

This course aims at training students on how to write research papers and theses in geography, and applications of methods in geography research. Students are expected to conduct different research projects on geographical topics.

GEO34421 Population Geography

Topics covered in this course include geographical distribution of population, factors influencing this distribution, different demographic structures, general mobility of population, people's relationship with the environment and natural resources.

GEO34422 Study and Analysis of Maps

The purpose of this course is to train students on how to draw topographical-geological points on maps and analyze these points as an integral part of the map components. They will also receive training on analysis of some other maps.

GEO34423 Geopolitics

This course covers a large number of topics: man and his internal and external relationships with a specific area of land, international problems, relations among countries, and their potentials and political borders, stages of countries' development, international relations, colonial expansion, old colonial activity by some colonial powers such as the British, the French, the Italians, the Germans, the Americans, and the Dutch ... etc. The course illustrates some methods of modern colonialism, contemporary international border disputes which have caused wars among many countries.

GEO34425 Remote Sensing

This course introduces the basics of aerial photography taken by satellites using thermal rays and their reflection, the RADAR, its waves as means for photos. The course also teaches students how to analyze these photos. This method can be applied in data collection on natural resources, land use, and identification of different environmental problems.

GEO34426 Methods of Demographic Analysis

Students, in this course, learn methods used in measuring and evaluating demographic data, demographic data analysis pertinent to birth, mortality, migration, life tables, and population projections.

FACULTY MEMBERS

Associate Professors

Mansour Abu Ali

Ph. D. in Economic Geography,
Ein Shams University, Cairo, Egypt, 1982.

Mohammed Abu Safat

Ph. D. in Geomorphology,
University of Anlagen, Germany, 1987.

Aziz Dweik

Ph. D. in Regional Geography,
University of Pennsylvania, USA, 1988.

Hussein Ahmed

Ph. D. in Demography,
University of Durham, UK, 1989.

Assistant Professors:

Taha Salameh Adarbeh

Ph. D. in Maps, Charles University,
Prague, The Czech Republic, 1983.

Adeeb Al-Khatib

Ph. D. in Urban Studies,
University of New York, USA, 1985.

Wa'el Inab

Ph. D. in Population Geography,
University of Durham, UK, 1989.

Ahmed Ra'fat

Ph. D. in Remote Sensing and GIS,
University of Durham, UK, 2000.

Instructors

Sae'd Abu Hijleh

M.A. in Political Geography,
Iwai University, USA, 1995.

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

Admission requirements

Students wishing to major in Sociology and Social Work must successfully complete Arab Society 35112 and Introduction to Sociology 35111. A minimum of 70% in each of the two courses must be obtained.

I. Requirements for a B.A. Degree in Sociology and Social Work

The Department of Sociology and Social Work offers a single specialization in sociology and social work. Students wishing to obtain a B.A. degree in this single specialization must successfully complete 137 credit hours. These include university, college and department compulsory and elective courses and "free" courses.

This plan applies to students in Sociology and Social Work as of 1999/2000.

1A. Compulsory courses (60 hrs)

Course #	Course title	Credit hours	Prerequisite
35210	Descriptive Statistics	3	35151, 35101
35211	Principles of Philosophy and Logic	3	-
35212	Demography	3	-
35213	Social Work	3	-
35215	Palestinian Society	3	-
35216	Individual Work	3	-
35311	Social Research Methods I	3	-
35312	Classical Social Theory	3	-
71314	Psychosociology	3	-
35314	Social Problems	3	-
35316	Political Sociology	3	-
35317	Class System	3	-
35318	Group Work	3	-
35319	Local Community Service	3	-
35411	Social Research Methods II	3	-
35412	Modern Social Theory	3	35311
35413	Rehabilitation	3	35312
35414	Social Change	3	-
35416	Anthropology	3	-
35470	Field work	3	35216

1B. Elective courses (21 hrs)

Course #	Course title	Credit hours	Prerequisite
35254	Family Sociology	3	-
35255	Israeli Society	3	-
35276	Educational Sociology	3	-

35287	Women and Society	3	-
35351	School Social Work	3	-
35354	Group Special Needs	3	-
35361	Religious Sociology	3	-
35365	Economic Sociology	3	-
35352	Youth and Adolescent Welfare	3	-
35374	Medical Sociology	3	-
35374	Social Texts in English	3	-
35419	Management of Social Institutions	3	-
35451	Criminology	3	-
35455	Industrial Sociology	3	-
35461	Social Work for the Disabled	3	-
35464	Society Organization & Development	3	-
35465	Urban and Rural Communities	3	-

Course descriptions

SOC35210 Descriptive Statistics

This course tackles the hows of expressing or translating social phenomena statistically with emphasis on preliminary statistical processes, media descriptive statistics and analytical methods applied in solving social studies.

SOC35211 Principles of Philosophy and Logic

Topics covered in this course include the concept of philosophy and its development throughout history. The course includes the study of famous philosophers. The course also highlights the importance of studying logic as an introduction to the study of philosophy.

SOC35212 Demography

This course covers a number of topics: demographic changes in the world, major trends in reproduction, mortality, migration and population growth in recent years. The course also investigates demographic conditions in the Third World.

SOC35213 Social Work

This course begins with definition of the concept of work in capitalist and oriental societies. Then it moves to introduce methods and techniques of social work at the individual, group and community levels. Students will also conduct field visits.

SOC35215 Palestinian Society

This course tackles the historical development of the Palestinian society under political changes and the influence of these changes on the structural fabric of the society. The course also investigates economic, demographic and cultural aspects. It also dwells on both the Palestinian personality and identity. At the end, the course investigates contemporary issues of the Palestinian society and its future in the light of the political

settlement.

SOC35216 Individual Work

The purpose of this course is to provide students with skills necessary for a social worker. The course introduces individual philosophy, principles, the hows of building a professional relationship and the hows of using instruments to study a social case. These instruments include interview, observation, home visits and cooperation with experts.

SOC35254 Family Sociology

This is an analytical study of both family and kinship, basic foundations of the Arab family, tracing family and marriage systems throughout the ages, and analysis of duties and rights upon the shoulders of family members.

SOC35255 Israeli Society

This course dwells on the Jewish migration to Palestine and Jews' colonization of the country before 1948, the social organizations and institutions in Israel: family, class system, population structures, problems of change and development.

SOC35276 Educational Sociology

This course is a study of the social context of education in terms of the reflection of culture on educational institutions concerned: home, schools, mass media. This is in addition to non-targeted educational institutions: genetics, environment and culture.

SOC35287 Women and Society

This course covers topics related to women: status of women in society, their influence on the family and society throughout the ages. The course also highlights the women's political, social and economic role in the society. It provides an analysis of the Arab women's future, and the future of the Palestinian woman in particular.

SOC35311 Social Research Methods I

This course introduces types of methods used in social research in terms of their nature, fields, goals. The course also includes practical training with an emphasis on the nature of this methodology.

SOC35312 Classical Social Theory

Topics covered in this course include concept of social theory, most important opinions of social thinking pioneers such as Ibn Khaldoun, Comte, Durkheim, Spinner, Marx, Parsons, Max Weber. The course illustrates the social manner of social classical theories which contributed to the crytallization and development of sociology.

SOC35314 Social Problems

This course introduces the concept of social problems, their nature, development, dangers and their relationship with the study of social problems through choice of basic problems facing Palestinian society: poverty, divorce, leisure time, deviation of juveniles, brain drain, and unemployment.

SOC35316 Political Sociology

This course investigates the social and political authority relations coupled with an emphasis on social foundation of the institutions, movements and political phenomena.

SOC35317 Class System

This course examines social classes in terms of emergence, development, class structure of the capitalist and socialist societies and Third World societies. Emphasis is given to the study of the characteristics of social structures in Arab countries.

SOC35318 Group Work

This course teaches students specific skills needed for work with groups to help group members to achieve common goals. The course also includes a training program since social work majors need some professional experience.

SOC35319 Local Community Service

The course introduces different models for society organization. The course focuses mainly on the role played by societies or local communities or groups to identify their needs, social services necessary for their local communities. Students will be also given case studies of problems in local community and the various means that may be used to solve these problems through community organization.

SOC35354 Group Special Needs

This course tackles a number of issues: meaning of mental health, adaptation, abnormal behavior, normal behavior, personality, consciousness and subconsciousness. The course tackles the problems of depression, anxiety, conflict, primary defense forms, mental disorders, and mental health problems in daily life.

SOC35351 School Social Work

This course aims at introducing students to educational processes in school and problems of their adaptation to them. The course also highlights the educational conditions appropriate for sound upbringing and the ways of dealing with students' problems in their schools whether among them or with their teachers or with the school system. The course defines the school counselor's duties and tasks and the importance of this counseling for the young students and the society.

SOC35361 Religious Sociology

This course is a study of religion as a social phenomenon and the historical development of religion, man's awareness, religious institutions and rites, the function of religion in social organizations with special emphasis given to social and ideological Islam in the Arab World.

SOC35365 Economic Sociology

Students, in this course, learn about economic facts as social phenomena. Students will be taught how to analyse environment economies and the role they have played in economic development, in addition to their effect on social welfare programs.

SOC35352 Youth and Adolescent Welfare

The purpose of this course is to enable students to learn about social and psychological aspects that influence the personality of man in his childhood & adolescence. The course also provides the student with counseling and therapy skills to follow, and prevention and therapeutic services provided to teenagers and youth.

SOC35374 Medical Sociology

This course is a sociological study of both healthy people and patients' behavior, as well as a study of social structure of systems leading to health care system.

SOC35374 Social Texts in English

This course aims at exposing students to social texts in English. The course emphasizes social terms used in the expression of social phenomenon to enable students to read and research English language texts dwelling on social subjects.

SOC35411 Social Research Methods II

This course aims at teaching the hows of putting to work research methods in social scholarship in terms of research design, its application, as well as its writing and revision.

SOC35412 Modern Social Theory

Topics covered in this course include theory in its intellectual development from the classical to the structural trend as well as functional and social interaction theories and the circumstances leading to change with reference to trends, modern struggle and behavioral reciprocity.

SOC35413 Rehabilitation

This course provides students with basic knowledge about disability, its types & its effects. It also provides the students with basic skills to help the disabled to live with their disability and allow them to be rehabilitated in line with their circumstances to become productive people in their communities and to be self-sufficient.

SOC35414 Social Change

As the title shows, emphasis will be given to both traditional and contemporary theories related to change and social development, evolutionary change, planning, social change, social development.

SOC35416 Anthropology

This course investigates origin of man and his culture. It also deals with basic concepts in this social science subject.

SOC35419 Management of Social Institutions

This course aims at introducing students to social institutions' methods and approaches which are different from those of economic business institutions. The course stresses the importance of social welfare philosophy which largely depends on formal government effort and non-government voluntary work.

SOC35451 Criminology

In this course, students will be introduced to the meaning of criminology, and the concept of crime from a social perspective. Students will also receive instruction on theories that explain crime phenomena in the past and at present. They will also learn about patterns of crimes, and the most rampant of these crimes in different societies.

SOC35455 Industrial Sociology

This course aims at providing students with information about the factory as a basic system in the society as well as the importance of social relations between workers and factory management. The course introduces both formal and informal organization in the factory. It also stresses the importance of industrialization process in society building and development. Instructor, of course, will raise common problems facing employees in the factory.

SOC35461 Social Work for the Disabled

This course aims at introducing students to developmental and sudden disabilities that prevent the disabled from social performance, causes and effects of these disabilities on individual and society, the ways of dealing or coping with them, educational and training programs set up for the rehabilitation of the disabled and their preparation for social life.

SOC35464 Society Organization and Development

This course illustrates the process of social change within an organized framework aimed at developing the society in economic, cultural, and social spheres, and solving problems that face developing societies such as educational, health and population problems.

SOC35465 Urban and Rural Communities

This course is an introduction to rural and urban communities, economic, and social organization of urban and rural populations. The course also holds a comparison between social change in the countryside and the city.

SOC35470 Field Work

This course aims at helping the student to apply knowledge and skills learned to serve individuals and groups, when he/she practices fieldwork in social institutions. The student receives both group and individual counseling.

SOC71314 Psychosociology

This course is offered by the College of Education. Students, in the course, learn about problems of interaction between individuals and groups and examines psychological as well as social phenomena and the possibility of measuring them scientifically.

FACULTY MEMBERS**Full Professors:**

Iyad al-Barghouthi

Ph. D. in Political Sociology,
University of Leningrad, Russia, 1981.

Assistant Professors:

Maher Abu-Zant	Ph. D. in Sociology, University of Wales, U.K., 1989.
Faisal Za'noun	Ph. D. in Family Sociology, University of Glasgow, Scotland, U.K., 1991.
Najeh Jarrar	Ph. D. in Political Sociology, Oxford University, U.K., 1998.
Instructors:	
Mazen Abu Aitah	M. A. in Ethnic Relations in the Middle East, Hebrew University of Jerusalem, Jerusalem, 1983.
Mohammed Sabouba	M. A. in Social Work, Louisiana State University, LA., U.S.A., 1987.

DEPARTMENT OF ARCHAEOLOGY

Admission requirements

To major in Archaeology, a student must complete successfully Introduction to History of Jordan and Palestine in Old Ages 33112 and Introduction to History of Ancient Civilizations 36112. A minimum of 70% must be obtained in each of the two courses.

1. Undergraduate Requirements for B.A. degree in Archaeology

The Department of Archaeology offers a single specialization in archaeology. Students wishing to obtain a B.A. degree in this specialization must complete, successfully, 134 credit hours. These include university, college and department compulsory, elective and “free” courses.

1A. Compulsory courses (48 credits)

Course #	Course title	Credit hours	Prerequisite
36201	Introduction to Archaeology	3	-
36202	Antiquities of Ancient East	3	-
36203	Old Pottery	3	-
36204	Greek and Roman Antiquities	3	-
36301	Byzantium Antiquities	3	-
36302	Islamic Architecture I	3	-
36303	Islamic Architecture II	3	-
36304	Islamic Arts	3	-
36305	Research Methodology	3	-
36306	History and Antiquities of the Arabian Peninsula	3	-
36401	Islamic Urban Planning	3	-
36402	Museum Art	3	-
36403	Islamic Coins	3	-
36404	Maintenance and Renovation of Archaeological Sites	3	-
36405	Practical Training in Antiquities	3	-
36406	Byzantine and Islamic Antiquities in Jordan and Palestine	3	-

1B. Elective Courses (30 credits)

Course #	Course title	Credit hours	Prerequisite
36251	Greater Syria's Ancient History & Antiquities	3	-
36252	Architecture in the Ancient Near East	3	-
36253	Nabateans	3	-
36254	Special Topic in Arabian Peninsula	3	-

	Antiquities		
36351	Archaeological Texts in English	3	-
36352	Ancient Language	3	-
36353	Ancient Decorations and Inscriptions	3	-
36354	Special Topic in Greater Syria's Ancient Antiquities	3	-
36451	Jerusalem Antiquities	3	-
36452	Drawing, Surveying and Photography	3	-
36453	Islamic Photography	3	-
36454	Special Topic in Palestine Antiquities	3	-
36455	Origin and Development of Arabic Calligraphy	3	-
36456	Technology in Old Ages	3	-
36457	Antiquities and Tourism	3	-

Course descriptions

ARC36201 Introduction to Archaeology

This course introduces archaeology as a science, the origin of civilizations, history of research on Palestine archaeological treasures, role of Western archaeological institutions and schools in crystallization of theoretical and applied methodologies, relationship between archaeology and other sciences. The course also explains the importance of pottery in archaeological studies, types of archaeological sites, ways of discovering archaeological sites, ways of dating ruins, and methods of excavations, the hows of interpreting archaeological evidence, and excavation authority. The course also includes field studies of archeological sites.

ARC36202 Antiquities of Ancient East

This course covers a number of topics: introduction to the Ancient East, its location, nature, importance, world civilization, effect of agriculture and use of metals on economic, social, and political development, artistic and architectural ruins, effect of religion and the environment on physical ruins and flint industries.

ARC36203 Old Pottery

This course introduces the student to different historical ages including the Iron Age. Students will learn about Arabesque properties, quality classification of pottery pieces, and will be provided with a list of abbreviations of important archeological journals devoted to Palestine antiquities in old ages.

ARC36204 Greek and Roman Antiquities

This course is a brief preliminary historical and geographical study of the lands ruled by the Romans and their influence on Greek arts. The course is also a study of Greek antiquities through their internal and external centers, planning of Greek cities, examples of these cities, Greek architecture in all its types, and other Greek arts: pottery,

photography, inscription, and coins. In addition, the course dwells on the importance of Greek arts in general compared with other arts. There is also a reference to the Hellenistic period and its cultural landmarks in the East. In the second part of the course, students will be given a brief preliminary study of the country ruled by the Romans, their antiquities through their external and internal centers, planning of Roman cities and Roman architecture in all its types, Roman arts such as pottery, photography, inscription, coins, glasses. This is also a study of important Roman and Greek antiquities in Palestine.

ARC36251 Greater Syria's Ancient History and Archeology

This course focuses on the area stretching from South Tortuous to Damascus, and from Euphrates River to the Mediterranean coast. The study will be in terms of history of archaeological activity in Syria and Lebanon. In Syria the study will cover up to the Old Bronze Age, archeological digs, written sources, the transitional period between the Old Bronze Age and Middle Bronze Age. Also the course will focus on Syria during the Old and Middle Bronze Age and the Late Bronze Age and finally during the Iron Age.

ARC36252 Architecture in the Ancient Near East

This course is a survey of the engineering work of temples, shrines, palaces, and houses in Iraq, Egypt, and Greater Syria in terms of architectural elements, architecture fashion, local origin and external influences.

ARC36253 The Nabateans

The course begins with a historical glimpse at the Nabateans, an archeological survey of the important Nabateans' sites. The course then moves to the study of field work architecture, engraving of rock surfaces by the Nabteans according to historical sequence, victory arch, holy yards, Al-Banat Palace temple, major amphitheatres in Petra, rock surfaces painted with multi-color paint, Nabteans and their coins, in addition to their writings, inscriptions, and pottery in all its types.

ARC36254 Special Topic in Arabian Peninsula Antiquities

This courses provides an introduction to the Arabian Peninsula, sources of its history, Saudi Arabian antiquities, and the Southern Civilization of the Arabian Penisula.

ARC36301 Byzantium Antiquities

Topics covered in this course are the following: an introduction about the Byzantium state, emergence of Christianity, Byzantium architecture (churches), Byzantium inscription, mosaics arts, Byzantium coins, icon and photo destruction movement, a comparism between Byzantium and Islamic arts at two levels: architechtrual and ornamental.

ARC36302 Islamic Architecture I

This course covers a number of topics: introduction to architecture in the Arabian Peninsula before Islam, the relationship between Islamic architecture and Byzantium and Sasanian architectures, effect of religion and the climate and raw materials on architecture of Prophet's Mosque, nucleus of religious facilities in early Islam, and Umayyad and Abbassid architectures. The course will also provide models of Islamic

architecture by using slides.

ARC36303 Islamic Architecture II

This course tackles Islamic architecture in Palestine from the Fatimid period to the Ottoman period. The study includes different patterns of architecture: religious, urban, military and social. Slides will be used.

ARC36304 Islamic Arts

This course will provide an introduction to the origin of Islamic art, relationship between this art and other arts, fashion of Islamic art, factors behind maturity of art, applied and ornamental arts, pottery and porcelain works, ancient fabrics, and metal works, ivory and modern works, glass works, art of writing, and impact of Islamic art on European arts. Illustrations by using slides will be given.

ARC36305 Research Methodology

Students, in this course, learn general principles pertinent to research methods and goals. They also learn about the nature of archaeological studies in terms of their goals, and historical relationship in terms of methods represented primarily in surveying and the hows of choosing a topic for research on surveying and excavations. Students will be introduced to preliminary report goals and elements, final report goals and elements, site, area, and term. Students will also learn critical foundations of archeological studies.

ARC36306 History and Antiquities of the Arabian Peninsula

This course highlights the Arabian Peninsula's antiquity landmarks, their history from the beginning of the Stone ages, Stone-Copper Age, Bronze ages, Iron Age to Classical Age. The course includes also a comparative study of Arabian Peninsula's antiquities and the antiquities in neighboring areas.

ARC36351 Archeological Texts in English

This course involves the translation of archeological texts in English in order to enrich students' archeological and technical terms. The course aims at allowing students to benefit from foreign references.

ARC36352 Ancient Language

Instructor chooses a family of inscriptions or ancient writings. These writings will be analyzed in terms of linguistic structure and historical value.

ARC36353 Ancient Ornamental Inscriptions

Topics covered in this course include an introduction to Semitic languages, inscriptions, archeological writings in the Arab countries, origin of Arabic writing and its development, Islam's attitude towards calligraphy, materials used for writing it, types of inscriptions, and archeological writings, Kufic calligraphy and its types, Neskhi calligraphy, calligraphy and calligraphers' schools, study of archeological writing models in terms of form and content.

ARC36354 Special Topic in Greater Syria's Ancient Antiquities

Instructor chooses a specific period in the history of ancient Greater Syria or a specific subject. He then investigates that period or subject in detail.

ARC36401 Islamic Urban Planning

This course covers several topics: introduction to origin of cities, impact of environment, climate and site on choice of city location, study of Islamic city landmarks and relationships among cities in addition to a comparison between Islamic and Byzantine cities.

ARC36402 Museum Art

Topics to be introduced in this course include origin and development of museums, museum purposes and goals, history of some Arab and international museums, a case study of one museum, choice of museum site, museum buildings, their design, show cupboards, show lists, organization of displayed items, cupboards of non-displayed items, cards, lighting, museum safety, museum administrative body, maintenance and renovation, security, role of archeological digs in supporting museum possessions.

ARC36403 Islamic Coins

This course introduces coins in terms of their importance, sources of their study, bartering system, study of Byzantine and Sasanian coins before Islam, coins in Early Islam, Islamic money denominations: dinars, dirham, fils. The course also dwells on Arabization movement during the term of Abdel-Malik Ben Marwan, Islamic minting industry, and Islamic minting types.

ARC36404 Maintenance and Renovation of Archaeological Sites

Students, in this course, learn about the importance of renovation and maintenance of antiquities, maintenance of antiquity pieces made from copper, iron, silver, glass and pottery. This study includes how these pieces get damaged and the best techniques to preserve and mend them. The course also covers maintenance of archeological sites and buildings in terms of human and natural factors affecting them and the best means to preserve them as well as some necessary maintenance works in the field such as removal of archeological finds and facilities and taking samples. The students are also introduced to regional and local antiquity laws.

ARC36405 Practical Training in Antiquities

Students learn about the different techniques of archeological digging, recording, drawing, photographing, and surveying. They learn theory and practice. They get involved in archeological excavations under direct supervision. At the end of digging, the student is expected to submit a detailed report on the site. The course also includes field visits to museums, and different archeological buildings.

ARC36406 Byzantium and Islamic Antiquities in Palestine and Jordan

This course is devoted to the study of both Byzantine and Islamic arts and architectures; architecture in Early Islam; Ummayyad and Abbassid architectures and examples of

historical buildings from both periods.

ARC36451 Jerusalem Antiquities

This course tackles the physical ruins of the Canaanites and Yabusians as well as Byzantine and Islamic ruins. The course involves field visits to Jerusalem. Slides will be used to illustrate these antiquities in the city.

ARC36452 Drawing, Surveying and Photography

This course is devoted to the study of principles of drawing in digs in terms of horizontal and vertical projects as well as archeological pieces, principles of surveying in general, field training, study of photography theory, chemical materials used in film processing and printing.

ARC36453 Islamic Photography

This course covers the following topics: Islam's attitude towards photography, types of Islamic photography, wall pictures, manuscripts, copies, mosaics, photography schools, technical production. Slides will be used to provide illustration.

ARC36454 Special Topic in Palestine Antiquities

Instructor chooses a special topic of antiquity in Palestine and then he tackles it in detail.

ARC36455 Origin and Development of Arabic Calligraphy

This course is a study of the basics, origin and development of Arabic calligraphy coupled with a practical presentation of different types of Arabic calligraphy in Arab East, Maghreb and Andalus.

ARC36456 Technology in Old Ages

This course examines the development of different industries in old ages in a chronological order. These industries include the manufacturing of flint (granite), its uses, and pottery industry. The course also investigates how man succeeded in producing copper, bronze, glass particularly concerning its installation.

ARC36457 Antiquities and Tourism

This course introduces Palestine archeological sites, how to study and rehabilitate them to be utilized in local and external tourism. The course also focuses on touristic facilities that have to be available in these locations to promote tourism in general and contribute to national income. The course will provide the student with an idea about how to deal with tourist groups in terms of reception, bookings, travel, hotels and restaurant management. It also aims at highlighting the importance of encouraging local and foreign investors in the field of tourism by providing them with facilities, incentives, promotion and touristic marketing of historical and archeological sites in Palestine as tourism and antiquities are becoming the biggest businesses in many countries. The course also sheds light on different types of tourism: religious, archeological, academic, therapeutic, historical...

FACULTY MEMBERS

Assistant Professor:

Jalal A. Qazzouh

Ph. D. in Islamic Architecture,
University of Cairo, Cairo, Egypt 1984.

Instructors:

Atef M. Khyweireh

M.A. in Classical-Islamic Archaeology,
Yarmouk University, Irbid, Jordan, 1990.

Mazen Abdel Latif

M.A. in Museums,
University of Jordan, Amman, Jordan, 1993.

Fa'ida Abu Ghazaleh

M.A. in Near East,
Yarmouk University, Irbid, Jordan, 1995.

DEPARTMENT OF JOURNALISM AND MASS MEDIA

Admission Requirements

To be admitted into this undergraduate program, a student must successfully complete Introduction to Media Studies 37111 and Mass Media in Arabic 37112. A minimum of 70% in each of the two courses is required. Students wishing to join the department must sit for a placement exam given by the department. If the number of potential applicants exceeds the limit, students will be admitted according to their averages.

1. Undergraduate requirements for a B.A. in Journalism

The Department of Journalism offers a single specialization in Journalism. Students wishing to obtain a B.A. in this field must complete 131 credits successfully. These include university, college and department compulsory & elective courses in addition to “free” requirements.

1A. Compulsory courses (54 hrs)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Practice	
37201	Media Ethics	3	3	-	-
37202	Research Methodology	3	3	-	-
37203	Media Theories	3	3	-	-
37204	Public Opinion	3	3	-	-
37205	Palestinian Media	3	3	-	-
37206	Mass Media in English I	3	3	-	English 10323
37207	Mass Media in English II	3	3	-	37206
37308	Principles of Public Relations	3	3	-	
37309	Media Research Field Survey	3	3	-	237204
37310	Content Analysis	3	3	-	37309
37311	Photojournalism I	3	1.5	1.5	-
37312	Journalistic Editing I: News	3	1.5	1.5	37311
37413	Journalistic Editing II: Investigative	3	1.5	1.5	37312
37414	International Mass Media	3	3	-	-
37415	Photojournalism II	3	1.5	1.5	37311
37416	Newspaper Production I	3	1.5	1.5	37312
37417	Magazine Production II	3	1.5	1.5	37416
37418	Practical Application in Journalism	3	1.5	1.5	37416
	Total	54			

1B. Electives (21 credits)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Practice	
37250	Media Propaganda	3	3		
37251	Management of Press Institutions	3	3		
37252	Development Media	3	3		
37253	Arab Mass Media	3	3		
37354	Israeli Mass Media	3	3		
37355	Islamic Mass Media	3	3		
37356	Society and Popular Media	3	3		
37357	Journalistic Advertisement	3	3		
37458	Modern Radio	3	3		
37459	Modern Television	3	3		
37460	Cinematic Film	3	3		
37461	Electronic Photography	3	3		
37462	Mass Media in Hebrew	3	3		
31259	Hebrew I	3	3		
31260	Hebrew II	3	3		

Course descriptions**JOR37201 Media Ethics**

This course provides insight into journalists' ethical and professional concerns and principles while they are collecting news stories, transmitting, editing and preparing for publication. The course focuses primarily on the importance of respecting truth, public opinion, accuracy, objectivity, and abstaining from deliberate distortion and fabrication.

JOR37202 Research Methodology

This course aims at teaching students methods and techniques used in collecting information, using the library, documentation of sources, data collection, sorting and organization. Students are also introduced to the structure of a scholarly research, and the manner of writing the paper in all its components. Students will be asked to submit well-researched topics according to what they have learned in the course.

JOR37203 Media Theories

This course provides an introduction to media theories and media studies. This includes an in-depth study of different theories and schools, important in the study of public mass media, in terms of their influence on readers or viewers and the role of newspapers, magazines, radio and TV in contemporary society.

JOR37204 Public Opinion

This is a study of public opinion, its elements, types, media potentials to influence the public opinion and direct it.

JOR37205 Palestinian Media

This course provides a general comprehensive picture about the origin, history and development of Palestinian printed and non-printed stages of media in the Palestinian history locally and in the Diaspora.

JOR37206 Mass Media in English I

This course highlights the importance of languages in journalistic work. The more languages the journalists know, the more they will be capable of communication and the more sources of data they will have. Undoubtedly, English has a special importance in the world and in Palestine. The course aims at strengthening the students' journalistic terms as well as their ability to read, write, understand, speak and translate.

JOR37250 Media Propaganda

This course provides a comprehensive idea about the concept of media propaganda and its uses, its influence on local, regional and international public opinion. The course sheds light on other nations' experiences in this field.

JOR37251 Management of Press Institutions

This course aims at teaching students how to manage or run press institutions in terms of work centralization, strategic planning and the setting up of a timetable for accomplishment of journalistic materials. The course is also concerned with the management of physical resources, establishment of a broad network of relations with sources of news in order to attract the largest number of people to the institution. The course also focuses on human resources development in press institutions, formulation of their policies and general procedures.

JOR37252 Development Media

This course aims at presenting models and theories to illustrate the role of communication in the development process. It also reviews research and theories pertinent to development media. The course investigates how the media can be used for the sake of the development process and the influence of communication in developing societies. The course examines also the origin and development of development media and the contribution of international institutions, like UNESCO, to the emergence of such media.

JOR37253 Arab Mass Media

This course builds and capitalizes on student's knowledge acquired in the study of Palestinian Media. The course examines the origin and development of newspapers, magazines, radio and TV stations and programs in the Arab World. The course particularly highlights important current issues such as Arab World media systems, censorship, freedom of public opinion, freedom of expression, publication, broadcast and dissemination of news.

JOR37207 Mass Media in English II

This course is a continuation of Mass Media in English I. The student is expected to invest his knowledge in the previous course in exploring more specialized journalistic writings in the fields of politics, economics, society, technology, sports, etc ...

JOR37308 Principles of Public Relations

This course introduces the concept of public relations, and how it works in different institutions. The course examines the personal and professional qualities public relations people must possess, and the methods they should have when dealing with local and foreign institutions and the public in general. The course also explains the relationship between public relations professionals and newspapers, magazines, radio and television.

JOR37309 Media Research Field Survey

This course aims at providing the students with scientific tools and methods used in identifying quickly but academically trends and attitudes of the public. The course will teach students how to design and conduct surveys and public polls. Students will be asked to conduct public polls on different subjects, how to form questions in the survey, how to complete it and how to sort out the data and prepare them for publication.

JOR37310 Content Analysis

This course will provide students with the basic scientific tool to study the newspaper, and magazine content properly and scientifically. The course stresses that a successful journalist/reporter is not only brilliant but also a proficient researcher in the field of media studies. An able editor or journalist is one who analyzes the content, in terms of quality and quantity.

JOR37311 Photojournalism I

This course introduces the art of photojournalism, and its difference from conventional photography. The course also shows the importance of pictorial material for the print media and television and its role in crystallization of public opinion. The course also includes a survey of the most important news values in it. The student will also learn about camera components, and how it is used. Practical experience in film processing and printing in photojournalistic lab will be provided.

JOR37312 Journalistic Editing I: News

Students in this course will learn the basic principles of journalistic editing, writing styles, organization of written material, journalistic arts, the first basis for newspaper "building" and composition. The news story is the most important art in journalistic editing; it's the bread and butter of the newspaper information, and it gives the newspaper its news value. Students will also learn the art of editing news stories theoretically and practically. They will get training on editing equipment.

JOR37354 Israeli Mass Media

This course aims at introducing the Israeli mass media in terms of history and development. The course mainly examines Israeli public and private newspapers,

magazines, radio ads, TV stations in Arabic and Hebrew. The course also highlights the nature of Israeli media system, its internal and external propaganda organs. The course is taught against the background of the continuous confrontation between the Palestinian and Arab mass media and the Israeli media in times of war and peace.

JOR37355 Islamic Mass Media

This course tackles the theoretical foundation of Islamic ideology towards the media, their function and role in the society. The course surveys the historical experience Muslims have passed through in their endeavor to develop their mass media for the last fourteen centuries. The course also addresses the features of Islamic media system and holds a comparison between these media and other mass media.

JOR37356 Society and Popular Media

This course aims at investigating the media influences on society and the media policies that try to strengthen the relationship with the society. The course also raises contemporary media issues. The course is taught in the context of the social, political, cultural, economic power of the media as a daily life necessity in the minds of contemporary societies. The course is also taught against the background of mass media role in strengthening social ties, links between the ruler and his subjects as well as in giving people the room for freedom of expression and reinforcing international relations. The course is also taught against the background of the negative role of the media if not used properly, especially if it divides the society, poisons minds and corrupts people through their material and pictures.

JOR37357 Journalistic Advertisement

This course explains the concept of advertising and traces stages of its development throughout history, importance of using it in public mass media to direct public opinion. The course also introduces the students to types of ads, the hows of editing them and their design for different media purposes.

JOR37413 Journalistic Editing II: Investigative Reporting

This is a continuation of Journalism I. It introduces the student to foundations and principles of preparing journalistic investigation through its stages: setting up goals, data collection, planning, implementation, photographing, investigative writing, its production and publication. This is in addition to introducing the student to the fundamentals of editing other journalistic arts which complement the newspaper building or the production of successful magazine especially the writing of essays, columns, and advertising. The students are expected to apply the theoretical material by receiving training on editing equipment.

JOR37414 International Mass Media

This course capitalizes on students' knowledge acquired from three previous courses, namely, Palestinian Media, Arab Media and Israeli Media. Students are introduced to history and development of all mass media: newspapers, magazines, radio stations, TV programs, international news agencies. The course will provide an analysis concerning the status of Palestinian and Arab mass media compared with Israeli-Zionist media. The

course also addresses important international media concepts such as “world propaganda”, international inclination and the “new media order”.

JOR37415 Photojournalism II

This course is a continuation of Journalism I. It covers practical and aesthetic aspects of documentary photographing, and photojournalism. Students will receive instruction on how to read pictures in books, newspapers, magazines as well as slides. The students also learn different schools’ and photographers’ methods. Students are asked to apply the theory and put it into practice for discussion in class.

JOR37416 Newspaper Production I

This course explains the stages of newspaper production and publication. It illustrates the broader meaning of production and the development of using the newspaper; the course gives the student the opportunity to receive practical training in the design and production of newspaper.

JOR37417 Magazine Production II

This course provides an idea about the foundations of magazine technical design, the difference between newspaper and magazine production. The course focuses on the design of magazine covers, its elements, body and typographic elements. Students receive also training on the hows of designing and producing a magazine.

JOR37418 Practical Application in Press

This course allows the student to review and check information he/she has received about news transmitting, editing and investigation as well as journalistic forms. Students also get more instruction on photography principles and newspaper production. Students will do a number of practical assignments in these fields. Students’ work will be compiled in newspaper format.

JOR37458 Modern Radio

In the first place, the course will focus on the language of the radio, the spoken word, and the difference between the radio and other popular mass media such as newspaper, and television. The course also considers sound influences and music and its uses. Then the course moves to explain the art of programming and radio programs, and news bulletins, editing, radio dialogues, sports programs and music. The course also dwells on drama programs and radio performances.

JOR37459 Modern Television This course capitalizes on the editing of press reports, radio news. Students will be introduced to principles and bases of editing television news, the hows of preparing a news bulletin, TV news, magazines, television investigative reporting, interviews and speeches. The course also highlights the importance of TV pictures, their degree of influence on viewers, role of television in societal development.

JOR37460 Cinematic Film

This course explores the basic principles of cinema camera movement, snapshots,

composition inside the picture and scenes, lighting and color. The course also covers the basic principles of film production and publication.

JOR37461 Electronic Photography

In this course, students are introduced to types of electronic cameras, their systems and different parts, the manner of using them for journalistic purposes, in addition to different types of journalistic snapshots according to situation, events, angles of various snapshots, relationship with lighting and sound. The course also provides an idea about electronic editing production and scenario. Students are divided into groups and will be charged with the production of a 10-minute documentary film.

JOR37462 Mass Media in Hebrew

The purpose of this course is to strengthen the student's knowledge of Hebrew mass media, to allow him to read, write, understand, speak and translate materials from Hebrew papers. This gives students an effective means of learning about Israeli media, their sources of news and how they get information from original sources.

FACULTY MEMBERS

Assistant Professors

Musa Abdel Mu'ti Alyan

Ph. D. in Audio-Visual Media,
Central Madrid University, Madrid, 1988.

Atif Salameh

Ph. D. in Media,
University of Minster, Germany, 1990.

Abdel Jawwad A. Abdel Jawwad

Ph. D. in Printed Press and Media Influences,
Howard University, USA, 1994.

Farid Abu Thuheir

Ph. D. in Arab Press in Exile,
University of Leeds, Leeds, UK, 1996.

DEPARTMENT OF FRENCH

Admission requirements:

1. Students are admitted to this specialization according to a placement exam in French.

Starting from first semester at the university, prospective students are classified into two levels: beginners and advanced. If a student obtains less than 50%, he/she may enroll in French 38100. And if he/she gets less than 80%, he/she has to take French 38102. Those getting 80% and greater may proceed to take French 38111, and 38112. Each group is taught a French course (non-credit) in addition to 3 hours of training in a French tutoring program for beginners, and another 3 hours of training for the second group, if found necessary.

2. Students must successfully complete French A1/38111 and French B1/38112 (see above).

3. Students will sit for a French proficiency examination immediately after completion of the aforementioned courses. A student's admission depends on the results of the French proficiency exam which takes 50% and on his cumulative average in the above courses which counts for the other 50%. (Students must score higher than 70% in each of the two courses 38111 and 38112.)

3. If the number of applicants exceeds the number allowed to major in French, the department will admit only those scoring the highest grades.

I. Undergraduate requirements for a B.A. in French

The Department of French offers a single specialization in French Language and Literature. Students wishing to obtain a B.A. in French must complete successfully 143 credit hours. These include university, college and department compulsory and elective courses, in addition to the six-credit hour "free" courses.

IA. Compulsory courses (75 credits)

Course #	Course title	Credit hours	Prerequisite
38114	Grammar I	38226	2
38116	Writing & Speaking Skills I	38228	2
38220	Writing and Phonetics	38230	2
38224	French -A2	38230	3
38226	French -B2	38252	3
38228	Grammar II	38254	2
38230	Writing & Speaking Skills II	38258	2
38252	French -A3		3
38254	French -B3		3
38256	Grammar III		2
38258	Speaking Skills III		2

38260	Writing Skills III		2
38310	French -A4		3
38312	French -B4		3
38314	Speaking Skills IV		2
38316	Writing Skills IV		2
38318	Grammar IV		2
38320	Computer Science		2
38350	French -A5	38310	3
38352	French -B5	38312	3
38354	Speaking Skills V	38314	2
38356	Writing Skills V	38316	2
38360	Guided Reading I		2
38366	French as a Foreign Language I		3
38410	Translation I		2
38412	History of France in the 20th Century		3
38414	Guided Reading II	38360	2
38416	Introduction to Phonetics	-	2
38418	French as a Foreign Language II	38366	3
38450	Panorama of French Literature I	-	2
38454	Introduction to Linguistics	38416	2
38456	Contrastive Linguistics	38366	2
38458	Practice in Class Teaching	38366	2
38460	Language Evaluation	38366	2
38462	Translation II	38410	2

IB. Electives (12 credits)

Course #	Course title	Credit hours	Prerequisite
38215	Geography of France		2
38255	French-Speaking Countries		2
38235	Drama		3
38327	Textual Grammar, Philology		3
38351	General History of France	38256	3
38361	Studying a French Literary Movement	-	2
38415	Analysis of French Civilization I	38356	3
38417	Introduction to Arts History	-	2
38419	French Political Life	-	3
38421	Guided Reading III	38414	2
38451	Panorama of French Literature II	38450	3
38453	Analysis of French Civilization II	38415	3
38455	Teaching French in Palestine	-	2
38457	Communicative Approach	-	2

Course descriptions

FRE38114 Grammar 1

This course aims at completing the process of learning French started in French 38112. Focus is on grammar and this will be within the intensive teaching program.

FRE38116 Writing & Speaking Skills 1

This course aims at inspiring students to express themselves, use vocabulary and grammar learned in previous courses, through an intensive program for this purpose.

FRE38215 Geography of France

This course will tackle topics dealt with in French History in the 20th Century. Moreover, it will also dwell on economic subjects and introduce some Francophone countries.

FRE38220 Writing and Phonetics

This course covers several elements: alphabets (upper and lower case), typed and handwritten, punctuation symbols, writing and reading rules, stress and accent, French alphabet learning by using typewriters.

FRE38224 French A2

Students, in this course, are expected to identify elements of basic discourse holding certain points of view. Discourse includes essay writing, description of a social or cultural event.

FRE38226 French B2

In this course, students will learn common phrases and sentences used in discussion and dialogues. Drawings will be used to allow students to describe and comment on them.

FRE38228 Grammar II

This course drills students on lessons about French language basic concepts and topics. To this end, Entraînez-Vous Grammaire set will be used for beginners.

FRE38230 Writing & Speaking Skills II

To achieve goals of DELF A2, A3, students, in this course, will be trained to express themselves in writing and speaking. In speaking, students will be trained to express themselves in different ways: dialogue, comment on life-like situations. In writing, students will be drilled on writing friendly letters and on expressing feelings and ideas.

FRE38235 Drama

This course will be run as a workshop. Students will be trained to develop their French through the acting of plays. This course also seeks to develop their writing skills and improve their spoken French.

FRE38252 French A3

In this course, students will learn how to write a well-organized text, free from technical mistakes. In addition, the course will help students in their rhetoric and in deduction/induction of information, writing of simple ads on tourist bulletin boards and simple letters.

FRE38254 French B3

Students will be introduced to types of texts, how to scan, skim and ask questions, in addition to expressing points of view. They will also learn how to rephrase ideas according to their own understanding of these texts. Also students will learn how to read selected texts aloud.

FRE38255 French Speaking Countries

As the course indicates, students will be introduced to Francophone countries: African, European, Asian, in addition to Canada. It will focus on confrontation between native language and the French language, and the impact of the latter on the former.

FRE38256 Grammar III

This course covers French intermediate grammatical rules. Students will be drilled to ascertain their understanding of these rules. Like in Grammar I, "Entraînez-Vous Grammaire" will be used.

FRE38260 Writing Skills III

This course aims at improving student's French writing skills: good sentences and short paragraphs.

FRE38258 Speaking Skills III

Through an integrated program, students in this course, will practice using concepts learned in Grammar III, French A3 and B3. By the end of the course, students will have good control of their spoken French. To this end, instructors will use *Café Crème II*.

FRE38310 French A4

Students, in this course, will learn how to rewrite some texts in the form of reports about others. They are also expected to complete comments on certain drawings in addition to interpretation and comments on tables and graphs. Further, students will learn how to summarize an academic text taking into consideration acquired analytical ability & language skills.

FRE38312 French B4

In this course, students will learn how to defend and introduce their points of view through interviews and debates. In addition, they will be allowed to hear recordings, to be discussed later, in an attempt to identify logic in these recordings.

FRE38314 Writing Skills IV

In this course, students learn more grammatical expressions, rules, and concepts, through

the use of *Café Crème III*. Students are expected to write on different topics, taking into consideration educational objectives of *Café Crème III*.

FRE38316 Speaking Skills IV

In this course, students learn more grammatical expressions, rules, and concepts, through the use of *Café Crème III*. Students are expected to write on different topics, taking into consideration educational objectives of *Café Crème III*.

FRE38318 Grammar IV

In this course, students will learn French advanced grammatical rules, coupled with drills on their application. To this end, the "Entrainez-Vous Grammaire" set will be used.

FRE38316 Post-Reading

This course aims at introducing students to the world of computer science in French. CD ROMs will be used in this course.

FRE38320 Computer Science

This course requires reading short literary texts in class, for discussion and analysis.

FRE38327 Textual Grammar, Philology

This course focuses on analysis of different text structures to allow best understanding of these structures. These include paragraphs, connectives, key words. Preparation for DELF/A3 and A4 will be part of this course. This course marks the end of the French learning period which lasts over five academic semesters. Students take and finish *Café Crème I, II, and III*. After the successful completion of this stage, students become qualified to major in French, learn how to teach it as a foreign language, or work as translators.

FRE38350 French A5

This course completes the material covered in *Café Crème III*.

FRE38351 General History of France

This is a study of the general history of France. Since it's a study of France's history before the 20th century, it may be taught in Arabic.

FRE38352 French B5

This course marks the end of the learning stage of French, after which the student is directed to French specialization.

FRE38354 Writing Skills V

By the end of this course, students should have completed an intensive study of written exams to prepare for written exams in French: DELF & DALF.

FRE38356 Speaking Skills V

This course marks the end of the learning process of French, in preparation for passing oral examinations related to French teaching: DELF & DALF

FRE38360 Guided Reading I

This course requires the study of a complete literary work which students are expected to read and prepare at home. They will also be asked to write a report on characters, themes and other elements in the text. Some parts will be discussed and analyzed. Summaries and reports are two basic requirements in this course.

FRE38361 Studying a French Literary Movement

This course is a study of a literary movement in France such as Romanticism, Naturalism and Surrealism.

FRE38366 Teaching French as a Foreign Language I

This course introduces principles and methods of teaching French as a foreign language

FRE38410 Translation I

In this course, students will practice translation from French into Arabic and the other way round. Texts of different nature will be translated. Interpretation from both languages will be practiced if time allows.

FRE38412 History of France in the 20th century

In this course, students will get general information about France. The course begins with contemporary French history and proceeds to history of France in the 20th century. Students may also take an equivalent course in Arabic.

FRE38414 Guided Reading II

This course involves the study and analysis of a complete literary work. Text will be discussed in class. Students are expected to submit written reports and make summaries. The course includes several topics and texts at an advanced level.

FRE38415 Analysis of French Civilization I

The aim of this course is to prepare French majors for DELF. The course involves the study of different aspects of French life, French traditions and civilization.

FRE38416 Introduction to Phonetics

This course is a study of French phonemes, places of their articulation, transcription of symbols in words and sentences.

FRE38417 Introduction to Arts History

To allow French majors to get a good knowledge of France and Europe, this course introduces the most important trends in art, both traditional and modern. Slides and museum catalogs are some of the tools used in the teaching of course materials. It is preferable to teach this course in French. However, if no qualified instructor is available, it may be taught in Arabic. French basic concepts will be provided.

FRE38418 Teaching French as a Foreign Language II

This course introduces methods, principles, and problems of teaching French as a foreign

language.

FRE38419 French Political Life

Students will be introduced to political life in France, history of political life, political parties and leaderships.

FRE38421 Guided Reading III

In this course, students will be asked to read literary works at home, write reports about them and their characters. These reports will then be discussed in class. Summaries of plots will also be required. Level of these works will be more advanced.

FRE38450 Panorama of French Literature I

This course looks at French literature in general, and then studies some literary movements through modern literary texts. The course will draw a distinction between old and modern French literature.

FRE38451 Panorama of French Literature II

This course is a continuation of French 38450. There will be a more comprehensive look at French literature and a study of different literary movements as well as some novels and short stories representing literary trends and French literary movements prevalent in the past and in modern times.

FRE38453 Analyzing French Civilization II

This course aims at preparing students for DELF. The course covers the study of all aspects of cultural life in France.

FRE38454 Introduction to Linguistics

This course involves the study of linguistics theories and terminology used by linguists.

FRE38455 Teaching French in Palestine

This course covers the hows of writing proposals, (language, educational, cultural) related to French speaking in Palestine, and the status of French in Palestine.

FRE38456 Contrastive Linguistics

This course is a comparative study of French and Arabic language systems in terms of their structures and mechanism at work in both systems.

FRE38457 Communicative Approach

This course highlights the basic principles of communication: communication skills, learner-centered approach, reactions, development of communicative skills, possibility of analyzing these skills from an educational perspective, to discover their suitability in the local community.

FRE38458 Practice in Class Teaching

This course focuses on supervision and appraisal of teaching through observation of classes, to bridge gaps in the French teaching process.

FRE38460 Language Evaluation

This course covers several topics: different forms of evaluating the school environment: internal and external; evaluation criteria of writing and speaking (when, where, how), the hows of learner's involvement in their own evaluation and others' evaluation of him, analysis of available criteria and tools as well as development of suitable methods.

FRE38462 Translation II

This course aims at polishing students' translation skills: French-Arabic and vice versa. To this end, a program is prepared ahead of time and for advanced stages. This program may also be prepared by students specialized in the field or by those who wish to major in it. Students build on what they must have taken in Translation I.

FACULTY MEMBERS

Assistant Professor

Bilal Al-Shafi

Ph.D. in Linguistics and Computer Science,
Université de Franche-Comté,
Besancon, France, 1997.

Instructors

Mohammed Fatayer

M.A. in Applied French,
Université de Franche-Comté,
Besancon, France, 1981.

Maha Atmeh

M.A. in Teaching French as a Foreign Language,
Université de Franche-Comté,
Besancon, France, 1999.

COLLEGE OF EDUCATIONAL SCIENCES

Background

Since its establishment in 1977, An-Najah National University has sought to develop the College of Educational Sciences in line with a cultural perception that realizes the university's goals of community outreach, establishing close links among all colleges, and creating interactive involvement among students in research and other activities.

College Academic Programs

The College of Educational Sciences offers a number of academic programs leading to a B.A. degree in four majors: Psychology, Methods of Teaching, Physical Education, and Elementary Education. In addition, the college has an M.A. program in four fields: Methods of English Language Teaching, Methods of Science Teaching, Methods of Mathematics Teaching, Curriculum and Instruction, and Educational Administration.

I. Undergraduate Degree: Study Plan

The college has study plans leading to B.A. degrees in four academic fields: Psychology (Dept. code #1); Methods of Teaching (Dept. code #2); Elementary Education (Dept. code #3); Physical Education (Dept. code # 4).

In their freshman year, students sign up for general courses offered by the college. Students must successfully complete 30 credit hours distributed as follows:

I-A College compulsory courses

Course #	Course title	Credit hours	Prerequisite
71111	Introduction to Library Science	3	-
71112	Introduction to Psychology	3	-
71113	Introduction to Education	3	-
71114	Descriptive Statistics	3	-
71115	Developmental Psychology	3	-
71116	Psychological Texts in English	3	-
72114	Learning How to Learn	3	-

I-B College elective courses: (Students may choose 9 credit hours)

Course #	Course title	Credit hours	Prerequisite
71119	Educational Aids	3	-
71126	Introduction to Computer Science	3	71114
71121	Introduction to Islamic Education	3	-
71122	Principles of Philosophy and Logic	3	-
71127	Education and Palestinian Society	3	-
72251	Analytical Statistics*	3	71114

* For Methods of Teaching students only.

College course descriptions

I-A Compulsory courses

EDU71111 Introduction to Library Science

This course is a study of the development of library science and the role various civilizations have played in establishing libraries as centers for the preservation of human knowledge. Students learn about library organization, book classification and indexing, and the range of library materials available to patrons. Emphasis is placed on developing students' library-use skills especially in writing reports and term papers. The course also covers other topics: development of writing and book publishing, history of libraries, library services, types of libraries, organization of human knowledge, sources of knowledge, research planning and writing.

PSY71112 Introduction to Psychology

Topics covered in this course are nature of psychology, development, learning, motivations, intelligence, perception, schools of psychology, areas of psychology, its branches, personality, mental disability, psychology tests The course also dwells on foundations, principles and areas of psychology, its mental and educational applications.

EDU71113 Introduction to Education

This course covers the following topics: concept, functions, goals, types and nature of education; development of educational thought throughout the ages; culture and education, education and society, role of education in changing the learner, and the educational process, curriculum, the teacher and means of education.

EDU71114 Descriptive Statistics

This course introduces students to nature of statistics, areas of its employment, statistical methods, samples, classification, tabulation and representation of data in graphs, frequency distributions, central tendency and dispersion measures, regression, correlation, probability and equal distributions.

PSY71115 Developmental Psychology

This course examines the concept of growth and development in its physical, mental, social and emotional dimensions. It also looks at principles of growth and developments, extent to which developmental characteristics and traits are influenced by genetic, family and social upbringing factors. The course also explains important relationships between development of growth aspects, and processes of family, environment and school formation through different stages of life.

PSY71116 Psychological Texts in English

The purpose of this course is to enable students to get acquainted with studies and research in the fields of education and psychology. To this end, a variety of selected readings in English will be used in this course. Emphasis is placed also on strengthening comprehension and understanding in addition to development of student's translation

skills from English into Arabic.

PSY72114 Learning How to Learn

This course deals with basic skills which every university student must possess in order to learn- before and after graduation. Necessary skills include speed-reading with comprehension, effective note-taking from sources such as lectures, textbooks, audio-visual materials, scholarly articles, research methods, technological aids and their use.

I-B Elective Courses

EDU71118 Introduction to Sociology

Beginning with features of social thought and the emergence of sociology, the course dwells on Ibn Khaldoun, a celebrated sociologist, August Kunt, and Emile Durkheim. Also covered are social phenomena, social relationships, social systems, and finally the role of sociology in daily life.

EDU71119 Educational Aids

This course introduces students to technological educational aids, their characteristics and advantages, technological tools, resources of educational aids, computer and its educational uses, educational equipment and its resources, curriculum and teaching aids.

EDU71120 Introduction to Computers

As the title suggests, the course focuses on acquainting students with computer hardware and software, areas of its uses, basic operation of a computer system, data processing, introduction to programming languages and computer applications, files, matrices, their significance, and their digital and letter types, information storage and retrieval.

EDU71121 Introduction to Islamic Education

Students, in this course, are introduced to philosophy and fundamentals of education in the Holy Qur'an, Prophetic tradition (sunna), principles of Islamic education and its goals; methods of teaching Islamic education; models of educational thought among Muslim scholars: AL-Ghazali, Ibn Sina, AL-Farrabi, AL-Qabisi, Ibn Muskuwei, Ibn Sahnoun, and Ibn Khaldoun.

EDU71122 Principles of Philosophy and Logic

Dealing with the concept and importance of studying philosophy, the course covers Greek thought as represented by Socrates, Plato, and Aristotle, and Western thought as represented by Descartes and Kant. It also covers Arab thought as represented by AL-Ghazali's and Ibn Sina's philosophies. Also explained is the concept of logic and its divisions, with emphasis on Aristotle's imaginary logic.

EDU71127 Education and Palestinian Society

Introducing students to the role of education in development of the Palestinian people, the course investigates the history of education in Palestine starting from the Islamic conquest to the Turkish Ottoman era, during British colonialism and then the Zionist occupation, and finally the role of education during the present Palestinian National

Authority era.

DEPARTMENT OF PSYCHOLOGY

Admission Requirements

To join the Department of Psychology, (dept. code #1), a student must successfully complete Introduction to Psychology 71112; Developmental Psychology 71115 and Descriptive Statistics 71114. A minimum of 70% must be obtained in the first two courses and a minimum of 60% in the third course.

Undergraduate Degree in Psychology:

I. Requirements for a B.A. degree in Psychology

The Department of Psychology offers a single specialization leading to a B.A. in Psychology. Students wishing to obtain an undergraduate degree in Psychology must complete 131 credit hours chosen from university, college and department compulsory and elective courses, in addition to “free” courses.

I-A Compulsory courses (45 credits)

Course #	Course title	Credit hours	Prerequisite
71211	Physiological Psychology	3	71112+71115
71212	Experimental Psychology	3	71112+71114
71213	Abnormal Psychology	3	71211+71115
71214	Learning Theories	3	71112+71115
71311	Field Studies	3	71213
71312	Principles of Mental Health	3	71115+71213
71313	Psychology of Personality	3	71211+71115
71314	Social Psychology	3	71115+71211
71315	Analytical Statistics	3	71114
71316	Principles of Psychological and Educational Measurements	3	71315
71317	Research Methodology in Psychology & Education	3	71315+71114
71411	Psychological Tests	3	71112+71114
71412	Clinical Psychology	3	71312+71211 +71114
71413	Principles of Psychological Counseling	3	71312+71114
71415	Applied Research Project	3	71315+71414

I-B Elective courses (27 credits)

Course #	Course title	Credit hours	Prerequisite
71251	Childhood Psychology	3	71115
71252	Psychology of Play	3	71115
71253	Psychology of Adolescence	3	71115
71254	Educational Psychology	3	71213+71114
71351	Differential Psychology	3	71213
72351	Special Education	3	71211
71352	Motivations and Emotions	3	71112
71353	Industrial Psychology	3	71115
71354	Special Group Psychology (talented & handicapped)	3	71213
71355	Psychology of Crime	3	71312+71213
71451	Psychology of Rumor	3	73114
71452	Psychoanalysis	3	71112
71453	Human Psychology	3	71312+71114
71454	Contemporary Trends in Psychology	3	71112
71455	Research Seminar	3	71315

Course descriptions {(E)=elective}**PSY71211 Physiological Psychology**

This course is an explanation of the different functions of various body organs and their relationships with behavior. These organs are the nervous system, both the central and decentral, representing the brain, the spinal cord, and the sensory respectively. The course also covers endocrine glands and their roles in influencing emotional and psychological state of a living creature. The course ends with a full explanation of the other organs of the body namely the sensory organs: sight, hearing, taste, smell, skin feeling, balance and psychological stress.

PSY71212 Experimental Psychology

This course considers methods of psychological experimentation, both lab and field, in all areas of psychology. The course also looks at the basic elements of the psychological experiment. Students will receive training exercises, in psychological experimentation, on seeing, hearing, physical consistency, learning, memory, retrieval... The course also introduces contributions of pioneers in experimental psychology.

PSY71213 Abnormal Psychology

Dealing with abnormal behavior, identifying possible genetic causal factors, the course also provides an evaluation of abnormal behavior on the basis of nerves and psychosis,

and introduces students to problems of adjustment, psychological and mental disorders, their diagnosis and treatments.

PSY71214 Theories of Learning

Introduces students to major theories of learning, behavioral and knowledge correlation theories in particular. Studies Pavlov's, Thorndike's and Skinner's contributions and achievements, in addition to contributions of Koehler, Kurt, Levin, Ausubel and Gagne. Concerning Skinner, the course will highlight his programmed learning.

PSY71251 (E) Childhood Psychology

Highlights importance of childhood, and prominent child psychology theorists such as Freud, Adler, Piaget and Erickson. The course introduces students to stages of development, before and after birth, early, middle and late childhood, and characteristics of each stage.

PSY71252 (E) Psychology of Play

This course explains the nature of playing, its historical development and the educators' interest in its educational significance. Of these educators, the course will introduce Froebel and Murray. The course also dwells on behavior of playing from a psychological perspective as interpreted by Freud, Piaget, Erickson, and Brunner. Emphasis is also given to importance of playing in kindergartens and its consideration as the center of child's early education before school.

PSY71253 (E) Psychology of Adolescence

This course investigates the significance of adolescence, physical, emotional, mental and sexual changes teenagers experience. The course also looks at stages of adolescence, their characteristics and their link with preparatory, secondary school and university stages. The students also learn about the needs of each stage, in addition to psychological and social problems of adolescence.

PSY71254 (E) Educational Psychology

Topics: Nature of educational psychology and its relationship with general psychology; application of concepts of behavioral and perceptive schools in the teaching process, facilitating the learning process; children's learning difficulties-talented and disabled children-potentials required for completion; measurement of learning progress and requirements for the learning and teaching process.

PSY71311 Field Studies (Abnormal)

Develops students' skills in identifying characteristics of abnormal behavior. To this end, students will visit centers for the handicapped, mental health hospitals, and psychiatric clinics. During these visits, students will learn about diagnosis of state of illness, symptoms of each illness, and methods of treatment.

PSY71312 Principles of Mental Health

This course begins with a definition of mental health, its aspects and status. It also focuses on adjustment, normal behavior, abnormal behavior, personality, consciousness

and unconsciousness, forms of front brain, frustration, eplipsey, anxiety, psychological disorders, social behavior, and forms of mental health in public life.

PSY71313 Psychology of Personality

This course investigates a number of theories: psychoanalysis, existentialism and Gestalt. The course will highlight supporters' and opponents' stands towards Freud's psychoanalysis theory, namely, Jung, Adler, Flugel and Cruze. Existentialists introduced include Kirk, Jark, Nietzsche and Sartre. Gestaltists and their followers are Levin, Allport, Murray and Cattle.

PSY71314 Social Psychology

Topics covered in this course are goals, fields and methods of research in social psychology, social upbringing, development of trends and their change, attraction, violence, aggression, loyalty, compliance, deviation, social influence, leadership influence, group dynamics and environment psychological effects.

PSY71316 Principles of Educational and Psychological Measurement

This course covers the following topics: review of statistical concepts in measurement, definition of measurement, development of educational and psychological measurement, measurement of validity and reliability, item analysis, criteria, measurement tools, and educational and statistical applications.

PSY71351 (E) Differential Psychology

This course begins by defining individual differences and showing their importance. Then the course moves to historical development of this branch of psychology. The course also emphasizes the impact of the environment and genetics in revealing individual differences and the hows of making use of these differences educationally and scientifically for the sake of securing educational process success.

PSY71352 (E) Motivations and Emotions

Topics covered in this course are hunger, thirst, curiosity, motivation for achievement, sex, locus of control, fear and anxiety

PSY71353 (E) Industrial Psychology

This course tackles a number of issues: importance and fields of industrial psychology, professional counseling, career choice, psychological tests for choice / selection of employees, data for employee selection, vocational training, work, design of instruments and equipment, the hows of raising workers' morale and meeting their basic needs to raise their living standards, their efficiency and productivity, and job satisfaction.

PSY71354 (E) Special Group Psychology

This course introduces the subject of mentally disabled children or gifted children, their prevalence in society, special teaching methods, counselling, and ways of assisting their social adjustment.

PSY71355 (E) Psychology of Crime

This course is a study of psychological, biological, social and environmental factors that lead to criminal behavior. It is also a study of the judge's psyche as well as the psyches of attorney general, investigator, defendant, lawyer, witness, and victim. The course looks at modern techniques used in investigation, imbalances in instincts particularly sexual and mental instincts. The course also sheds light on mental and psychological disabilities and their relationship with criminal behavior and the effect of illnesses and psychiatric diseases in criminal responsibility.

PSY71411 Psychological Tests

Topics covered in this course include principles and concepts pertinent to tests and their construction; psychological measurements, validity and reliability of tests, effectiveness of items and criteria, ways of their derivation and factors influencing their administration. The course also teaches students the hows of getting results of these tests, ways of test standardization and conditions for their application.

PSY71412 Clinical Psychology

This course discusses the nature of clinical psychology, history of its development, its place in modern times, methods of diagnosis through interviews, tests, and observations. The course also highlights most important techniques used in providing psychiatric treatment to patients, their families and their communities inside and outside mental health facilities.

PSY71413 Principles of Psychological Counselling

This course begins with an explanation of counselling concept, orientation, counselling process, and counsellor's moral principles. It also explains models and theories of psychological counselling, educational and psychological methods and techniques. The course also dwells on problems facing individuals and the need for counselling in some courses. Emphasis is also given to educational counsellor's methods, role, commitment, academic and educational efficiency and the hows of making an orientation and counselling program.

PSY71315 Analytical Statistics

Topics covered in this course are sample, population, statistical evidence, hypothesis testing, percentage, arithmetic means, variance, correlation, types of tests and their statistical applications.

PSY72351 Special Education

Students, in this course, are introduced to exceptional groups with emphasis on disability categories, nature and forms of disabilities, in terms of causes and characteristics. Emphasis will be placed on methods and means of diagnosis, intervention and evaluation of services provided to these categories or groups.

PSY71317 Research Methodology in Education and Psychology

The aim of this course is to train students on how to conduct research in education and psychology. To this end, the students will learn about methods and tools of research. Emphasis is placed on longitudinal and latitudinal techniques, descriptive method,

experimental method and other methods such as observation, deduction and induction.

PSY71415 Graduation Project

Each student is expected to conduct a field study in psychology under supervision of a department instructor. Students are also expected to follow the methods of academic research.

PSY71451 (E) Psychology of Rumor

This course aims at introducing students to psychological war in terms of its bases, aims characteristics and uses; the difference between real war and psychological war; fields of psychological war, brainwashing, intelligence wars; rumors and their fabrication, dissemination, follow-up and purposes.

PSY71452 (E) Psychoanalysis

This course traces the origin of psychoanalysis school at the hands of Sigmund Freud; it also looks at psychoanalysis methods, free association method, difficulties impeding it such as resistance and change or transformation. The course deals with dreams and their importance in psychoanalysis, symbolism in dreams, and using slips of the tongue and pen pitfalls in psychoanalysis.

PSY71453 (E) Human Psychology

This course is an investigation of general principles on which human psychology is based, theories put forward by Abraham Maslow-Third Power Psychology-Karl Rogers, Earl Kley and Arthur Commps.

PSY71454 (E) Contemporary Trends in Psychology

This course is a discussion of recent research in psychology, particularly findings of this research, recent development in the field, and modern and contemporary theories in psychology.

PSY71455 (E) Research Seminar

This seminar addresses issues in psychology of special significance. Students will be required to conduct individual projects, discuss them with their instructor and present them in front of an audience.

FACULTY MEMBERS

Associate professors

Abed A'ssaf Ph.D. in Psychological Counselling,
Ohio State University, USA, 1988.

Assistant Professors

Rasmiyah Abdel Qader Ph.D. in Clinical Psychology,
Ein Shams University, Cairo, Egypt, 1983.

Ali Shak'a Ph.D. in Psychology,
Ein Shams University, Cairo, Egypt, 1986.

Instructors

Amneh el-Barq M.A. in Psychology,

Ma'rouf Shayeb Southern Illinois University, Carbondale, USA, 1985.
M.A. in Psychological Counselling,
University of Jordan, Amman, Jordan, 1994.

Muna Sha'th M.A. in Educational Administration,
An-Najah National University, Nablus, Palestine, 1997.

Amjad Abu-Jdayy M.A. in Educational Psychology,
Yarmouk University, Irbid, Jordan, 1998.
(on academic leave)

DEPARTMENT OF TEACHING METHODS

Undergraduate degree in Methods of Teaching

The Department of Teaching Methods offers seven majors: Science; Mathematics; English, Social Studies, Arabic, Hi-tech Education and Vocational Training, in addition to the Educational Upgrading Program.

I. Requirements for a B.A. degree in Teaching Methods

To obtain a B.A. degree in Teaching Methods, a student must successfully complete 134 credit hours, which include university, college and department compulsory and elective courses.

IA. Compulsory courses (12 credits)

Course #	Course title	Credit hours	Prerequisite
37312	Principles of Mental Health	3	-
72211	Curriculum and Instruction I	3	-
72227	Computer in Methods of Instruction	3	-
72317	Classroom Management	3	-
72351	Special Education	3	-
72411	Research Methodology	3	71114
72415	Instructional Design	3	-
72213	Methods of Teaching Primary Stage	3	-

N.B. Students may choose other academic courses, not cited in ancillary courses, as department elective requirements.

Course descriptions

TM72211 Curriculum and Instruction

This course aims at introducing students to concept of school curriculum in general and factors influencing it. The course also considers the curriculum in the light of modern theories of teaching. The course investigates also psychological and social foundations of the curriculum, types and organization of academic curricula, and their planning and steps of curriculum setting up, appraisal and evaluation.

TM 72213 Methods of Teaching Primary Stage

Students, in the course, are introduced to characteristics of material to be taught and its functions and goals and modern trends in teaching it. Students also learn about useful techniques in teaching different subjects in this stage and teaching aids used.

TM 72227 Computer in Methods of Instruction

This course is designed to teach students on how to use the computer in educational process: computer-oriented education, computer-assisted learning, and simulation. In

addition, students are also introduced to SPSS packages in data analysis particularly for M.A. theses.

TM 72300 Supervised Teaching

The aim of this course is to prepare and train students to employ academic knowledge and apply it in a classroom setting. To this end, students will be required to practice teaching in schools for one full semester (3 hours per week). They will also prepare and implement study plans.

TM 72313 Instructional Design

This course aims at helping students design lesson plans, determine concepts pertinent to civil, emotional and psychological goals. Students will also be able to determine activities, methods and evaluation. The course ends with an introduction to tasks teachers are charged with in the designing of instruction and planning.

TM 72317 Classroom Management

This course aims at acquainting students with the scientific foundations of school management from all its aspects. Emphasis is particularly placed on scientific and practical aspects. The course stresses running school and it also shows methods of work. The management usually impacts level of success in performing its message.

TM 72351 Special Education

Students, in this course, are introduced to exceptional groups, and disability categories in particular, in terms of nature and form of their disabilities, their causes and characteristics. Emphasis is placed on methods and means of diagnosis, intervention and evaluation of services provided to these groups.

TM72352 Evaluation in School

Students in this course learn about evaluation, development, goals and its various tools, and selection of measurements. They include types of tests, techniques of their construction and analysis as well as the hows of evaluating students' academic achievement.

TM 72411 Research Methodology

This course aims at teaching students methods of academic scholarly research and developing their research skills. Students will be introduced to research types, ways of conducting them, concepts, methods and foundations used by researchers. Instructor will help students on how to choose goals, research problems, use tools for data collection and make analysis of these data in order to arrive at possible solution to these problems.

Compulsory courses (96 credit hours arranged according to offered specializations):

1. B.A. degree in Methods of Teaching Science

Admission requirements:

To major in Methods of Science Teaching, a student must successfully finish General Physics I 22105, General Chemistry 23101 and General Biology 24101. A minimum of

70% must be obtained in each of the above courses.

1A. Compulsory courses (18 credit hours)

Course #	Course title	Credit hours	Prerequisite
72371	Methods of Science Teaching I	3	-
72381	Methods of Science Teaching II	3	72317
72316	Design and Production of Educational Aids for Science Teaching	3	72314 or concurrent
72352	Evaluation in School	3	-
72415	Instructional Design	3	-
72300	Supervised Teaching	3	72315, 72314

1B. Ancillary compulsory courses (51 credits)

Course #	Course title	Credit hours	Prerequisite
21101	Calculus I	3	-
22105	General Physics for Education I	3	-
22106	General Physics for Education II	3	22105, 22107
22107	General Physics I (Lab)	1	22105 or concurrent
22108	General Physics II (Lab)	1	22106, 22107
22221	Waves and Optics	3	22102
22231	Electronics	3	22106
22242	Modern Physics I	3	22106
23101	General Chemistry I	3	-
23102	General Chemistry II	3	23101, 23107
23107	General Chemistry (Lab) I	1	23101 or concurrent
23108	General Chemistry (Lab) II	1	23102, 23107
23211	Analytical Chemistry	3	23108
23231	Organic Chemistry	3	23102
24101	General Biology I	3	-
24102	General Biology II	3	24101
24107	General Biology (Lab) I	1	-
24108	General Biology (Lab) II	1	-
24301	Ecology	4	-
91350	Selected Topics (plant feeding)	4	-

Course descriptions

TM72314 Methods of Science Teaching I

Topics covered in this course include goals, functions and characteristics of science learning. Students are acquainted with up-to-date methods used in teaching science. The course also looks at ways of science teacher training and his/her qualities.

TM72315 Methods of Science Teaching II

This course covers the following topics: detailed study of science teaching methods and educational aids used to reinforce these methods. In this course, students are given an opportunity to apply these teaching methods. The course also includes techniques used in student evaluation.

TM 72361 Design and Production of Educational Aids for Science Teaching

In this course, students are introduced to a number of topics: the concept of educational aids, their qualities, elements and sources; curricula, educational charts, felt boards, educational equipment and its resources.

2. B.A. degree in Methods of Teaching Mathematics

Admission Requirements:

To major in Methods of Teaching Mathematics, a student must successfully complete Calculus I 21101 and Calculus II 21102. A minimum of 70% must be obtained in each of them.

2A. Compulsory courses (18 credits)

Course #	Course title	Credit hours	Prerequisite
72300	Supervised Teaching	3	72372, 72382
72415	Instructional Design	3	-
72316	Design and Production of Educational Aids for Mathematics Teaching	3	72314 or concurrent
72352	Evaluation in School	3	-
72372	Methods of Teaching Mathematics I	3	-
72382	Methods of Teaching Mathematics II	3	72372

2B. Ancillary compulsory courses (51 credits)

Course #	Course title	Credit hours	Prerequisite
21101	Calculus I	3	-
21102	Calculus II	3	21101

22105	General Physics for Education I	3	-
22106	General Physics for Education II	3	22105
21201	Calculus III	3	21102
21203	Principles of Differential Equations	3	21201
21211	Principles of Mathematics	3	21201
21212	Real Analysis I	3	21211
27120	Introduction to Computer Science	3	-
27271	Application Software	3	27120
21224	Programming in Pascal	3	27120
21231	Statistical Methods	3	-
21241	Principles of Linear Algebra I	3	21102
21242	Modern Algebra I	3	21211
21322	Linear Programming	3	21221, 21241
21343	Principles of Numerical Theory	3	21211
21351	History of Mathematics	3	-

Course descriptions

TM72314 Methods of Teaching Mathematics I

Topics covered in this course are characteristics, functions and goals of teaching Mathematics. Student will be kept abreast of developments in teaching methods and lesson planning. The course ends with a description of a good mathematics teacher.

TM72315 Methods of Teaching Mathematics II

This course covers the following topics: detailed study of mathematics teaching methods and educational aids necessary for reinforcing these methods. Students will be given an opportunity to apply teaching methods and evaluate students' learning through the use of different teaching methods.

72316 Design and Production of Educational Aids for Teaching Mathematics

Topics covered in this course are concept of educational aids, their elements and characteristics, sources, curricula, educational charts, felt boards, educational equipment and its resources.

3. B.A. degree in Methods of Teaching English

Admission requirements:

To major in Methods of Teaching English, a student must successfully complete College English I 32111 and College English II 32112. A minimum of 70% must be obtained in each of them.

3A. Compulsory courses (18 credits)

Course #	Course title	Credit hours	Prerequisite
72314	Methods of Teaching English I	3	-
72300	Supervised Teaching I	3	72314, 72315
72315	Instructional Design	3	-
72316	Design and Production of Educational Aids for English Teaching	3	72315 or concurrent
72315	Methods of Teaching English II	3	72221
72352	Evaluation in School	3	-

3B. Ancillary compulsory courses (51 credits)

Course #	Course title	Credit hours	Prerequisite
32111	College I	3	10103
32112	College II	3	10323
32201	Conversation and Aural Comprehension	3	32111
32202	Advanced Grammar	3	10323
32203	Writing and Research	3	32112
32220	Oral Communication	3	32201
32234	Phonetics	3	-
32231	Introduction to Linguistics	3	32230
32260	Introduction to Literature	3	-
32261	Short Story	3	32260
32262	Poetry	3	32260
32303	Advanced Writing	3	32203
32386	Contrastive Linguistics	3	32231
32340	Structure of English Language	3	32202
32360	Drama	3	32260
32390	Translation I	3	-
32391	Translation II	3	32390

Course descriptions**TM72314 Methods of Teaching English I**

This course covers principles, functions and goals of teaching English. It also acquaints students with new methods of teaching, lesson planning, and qualities of a good English teacher.

TM72315 Methods of Teaching English II

This course in a detailed study of English teaching methods and educational aids used to reinforce these methods. The course also provides students with an opportunity to apply these teaching methods in classroom setting. The students also learn about evaluation of a pupil's learning.

Tm72316 Design and Production of Educational Aids for English Teaching

This course covers a number of topics: concept of educational aids, their characteristics, elements, and sources; curricula, educational charts; felt boards, educational equipment and its resources.

4. B.A. degree in Methods of Teaching Social Studies

Admission requirements:

To major in Methods of Teaching Social Studies, a student must successfully complete History of Modern Thought 33111 and Geography of Palestine 34111. A minimum of 70% must be obtained in each of the two courses.

4A. Compulsory courses (81 credits)

Course #	Course title	Credit hours	Prerequisite
73227	Methods of Social Studies Teaching I	3	-
72300	Supervised Teaching	3	I72371, 72372
72313	Instructional Design	3	-
72316	Design and Production of Educational Aids for Teaching Social Studies	3	72372 or concurrent
73327	Methods of Social Studies Teaching II	3	72371
72352	Evaluation in School	3	-

4B. Ancillary compulsory courses (51 credits)

Course #	Course title	Credit hours	Prerequisite
33111	History of Modern Thought	3	-
33211	History of Ancient East	3	-
33215	History of Abbassid Caliphate	3	-
33216	Introduction to Archaeology	3	-
33311	History of Maghreb and Andalusia	3	-
33413	History of Modern Palestine	3	-
33414	History of Contemporary World	3	-
34111	Geography of Palestine	3	-
34213	Introduction to Physical Geography	3	-
34212	Quantitative Geography	3	-
34225	Geography of the Arab World	3	-

34312	Principles of Demography	3	34213
34314	Water Resources Geography	3	34212
34315	Urban Geography	3	-
34412	Transportation Geography	3	-
34423	Geopolitics	3	-
35416	Anthropology	3	-

Course descriptions

TM 73227 Methods of Social Studies Teaching I

This course covers a number of topics: characteristics, functions and goals of teaching social studies, up-to-date methods in preparation for teaching social studies, ways of lesson planning and qualities of good social studies teachers.

TM 73327 Methods of Social Studies Teaching II

Topics covered in this course are the following: a detailed study of methods used in social studies teaching, instructional aids necessary for reinforcement of these methods. The course also provides students with an opportunity to apply these methods in classroom setting. Student teachers also learn about evaluation of students' progress.

TM72316 Design and Production of Educational Aids for Teaching Social Studies

This course covers concept of educational aids, their characteristics, elements and sources; curricula, educational charts, felt boards, equipment and resources.

5. B.A. degree in Methods of Teaching Arabic

Admission requirements:

To major in Methods of Teaching Arabic, a student must successfully complete Introduction to Literary Appreciation 31111, and Morphology 31211. A minimum of 70% must be obtained in each of them.

5A. Compulsory courses (18 credits)

Course #	Course title	Credit hours	Prerequisite
73218	Methods of Teaching Arabic I	3	73315, 73218
72313	Instructional Design	3	-
72353	Evaluation in School	3	-
73218	Supervised Teaching I	3	-
73315	Methods of Teaching Arabic II	3	73218
72316	Design and Production of Educational Aids for Teaching Arabic	3	72314 or concurrent

5B. Ancillary compulsory courses (51 credits)

Course #	Course title	Credit hours	Prerequisite
31111	Introduction to Literary Appreciation	3	-
31211	Morphology	3	-
31212	Syntax I	3	-
31213	Arabic Rhetoric I	3	-
31214	History of Pre-Islamic Literary Texts	3	-
31215	History of Islamic Literary Texts	3	31214
31228	Hadith Sciences	3	-
31312	Syntax II	3	31212
31313	Abbassid Literature: Poetry	3	31215
31314	Arabic Phonetics	3	-
31316	History of Arabic Literary Criticism	3	-
31331	Exegesis and Exegesists' Methodologies	3	-
31351	Prosody and Rhyme	3	-
31414	Arabic Semantics	3	-
31415	Modern Literature II	3	-
31416	Modern Literary Criticism Schools and Methods	3	-
31453	Modern Palestinian Literature	3	-

Course descriptions**TM 73218 Methods of Teaching Arabic I**

This course introduces students to principles, functions and goals of teaching Arabic. The course also introduces recent methods used in preparation of instructional material. The course ends with a look at ways for teacher preparation and qualities of a good teacher.

TM 73315 Methods of Teaching Arabic II

Topics covered in this course are the following: detailed study of methods used in teaching Arabic and instructional aids used to reinforce these methods. Students are also given an opportunity to apply these methods in a classroom setting. Student teachers will also learn about evaluation of pupils' learning.

TM72316 Design and Production of Educational Aids for Teaching Arabic

This course covers a number of topics: concept of instructional aids, their elements and characteristics; curricula, educational charts, felt boards, equipment and resources.

6. B.A. degree in Methods of Technological and Vocational Training**Admission requirements:**

To major in Methods of Technological and Vocational Training, a student must have been a scientific or vocational stream high school graduate.

Requirements for a B.A. degree in Methods of Technological and Vocational Training
Students holding a community college diploma in Agriculture, Vocational, Trade and Medical Professions, and wishing to obtain a B.A in Methods of Technological and Vocational Training, must successfully complete the following courses:

6A. University and college compulsory courses (4 credits)

Course #	Course title	Credit hours	Prerequisite
10106	Physical Education	1	-
71114	Descriptive Statistics	3	-

6B. Compulsory courses (27 credit hours)

Course #	Course title	Credit hours	Prerequisite
72213	Methods of Teaching Primary Stage	3	-
72319	Computer in Education	3	-
72352	Evaluation in School	3	-
72374	Methods of Vocational Education	3	-
72375	Methods of Agricultural Education	3	-
72376	Methods of Nursing Education	3	-
72377	Methods of Management and Financial Education	3	-
72378	Supervised Teaching	3	-
72411	Research Methodology	3	-

6C. Engineering College compulsory courses (12 credits)

Course #	Course title	Credit hours	Prerequisite
52105	Technical Drawing	2	-
65107	Workshop I	1	-
61204	Building Materials	3	-
62237	Building Construction	3	-
63207	Electrical Engineering	3	-

6D. Agriculture College compulsory courses (12 credit hours)

Course #	Course title	Credit hours	Prerequisite
91211	Principles of Plant Production	3	-
92211	Principles of Animal Production	3	-
92314	Goat and Sheep Production	3	-
92441	Diary Processing and Storage + Field Work	3	-

6E. Economics College compulsory courses (9 credit hours)

Course #	Course title	Credit hours	Prerequisite
51121	Principles of Business Management	3	-
52121	Principles of Accounting	3	-
53150	Principles of Economics	3	-

6F. Public Health compulsory courses (9 credits)

Course #	Course title	Credit hours	Prerequisite
72301	Health Education	3	-
72302	Nursing Education + Field work	3	-
72303	Childhood Care	3	-

Vocational elective courses (12 credits chosen from the following four sets):**1. Engineering College courses (6 credits)**

Course #	Course title	Credit hours	Prerequisite
61471	Engineering Economics	3	-
65487	Engineering Safety	3	-

2. Economics College courses (6 credits)

Course #	Course title	Credit hours	Prerequisite
52122	Accounting II	3	-
51314	Organizational Behavior	3	-

3. Agriculture College courses (6 credits)

Course #	Course title	Credit hours	Prerequisite
91427	Evergreen Fruit Tree Production	3	-
91432	Bee Breeding	3	-

4. Elective courses (From Methods of Teaching Dept.)

Course #	Course title	Credit hours	Prerequisite
72220	Social Studies	3	-
72351	Special Education	3	-

Course descriptions

MET 72211 Design and Production of Instructional Aids

This course aims at introducing students to a number of topics: concept, importance and classification of instructional aids (audial, audio-visual and mobile visual system); design and production of audio-visual instructional materials, features of instructional equipment and tools; employment of aids in teaching; applied models in production of audio-visual materials.

MET72316 Methods of Nursing Teaching

This course introduces students to characteristics of teaching nursing education, its goals and functions. Students also learn about new methods of teaching and advances in nursing.

MET72317 Methods of Management and Financial Education

As the title shows, students learn about methods of management and financial education and aids accompanying these methods. Students also learn about the evaluation of pupils' performance.

MET72319 Computer in Education

Students in this course are introduced to the hows of using computer in educational process and designing software programs.

MET72374 Methods of Vocational Education

This course examines characteristics of methods used in preparations of material, ways of teacher training and qualities of good teachers.

MET72375 Methods of Agricultural Education

This course is a detailed study of methods used in the teaching of agricultural material, instructional aids necessary to reinforce these methods. Students will be also given an opportunity to apply these methods in classroom settings. Students also receive

instruction on how to evaluate students through different ways.

N.B. Community college diploma holders, in vocational professions, are exempted from taking 49 credit hours distributed as follows:

- * University requirements: 22 credits
- * College requirements: 21 credits
- * Dept. requirements: 6 credits

B.A. Degree in Educational Upgrading Program

The Educational Upgrading Program, established in the early 1990s, has come in full harmony with the university's goals and philosophy. The program aims at strengthening relationship with the Palestinian society and the Arab society in general. It also aims at playing an outstanding and leading role in providing the local and Arab markets with professional cadres capable of performing their tasks skillfully and efficiently.

To join this program, a student must meet the following criteria:

- A. High school certificate (tawjihi) or equivalent. In general, 60% is the minimum acceptable score for applicants to this program.
- B. A diploma from a two-year accredited community college and a pass in the community college comprehensive exam.

To get a B.A. from Department of Teaching Methods, community college diploma holders, in the College of Educational Sciences, must successfully complete 81 credits distributed as follows:

I. Academic requirements for a B.A. in Educational Upgrading Program

IA. University compulsory courses (15 credits)

To obtain a B.A. from the Department of Teaching Methods, College of Educational Sciences, all students must successfully complete the following courses:

Course #	Course title	Credit hours	Prerequisite
10105	Palestinian Studies	3	-
71111	Introduction to Library Science	3	-
71114	Descriptive Statistics*	3	-
71116	Psychological Texts in English	3	-
71121	Introduction to Islamic Education	3	-
72114	Learning How to Learn **	3	-

* For students majoring in humanities: Arabic; English; Social Studies; Islamic Education; Elementary Education.

** For students majoring in science.

1B. Compulsory courses (33 credits)

Course #	Course title	Credit hours	Prerequisite
21103	General Mathematics*	3	-
31213	Syntax I	3	-
72211	Methods and Curriculum I**	3	-
72212	Methods and Curriculum II	3	-
72213	Methods of Teaching Primary Stage	3	-
72314	Methods of Teaching in Specialization I	3	-
72315	Methods of Teaching in Specialization II	3	-
72316	Design and Production of Instructional Aids	3	-
72311	Physical Sciences	3	-
72312	Social Studies	3	-
72352	Evaluation in School	3	-
72411	Research Methodology	3	-

* For students majoring in humanities: Arabic; English; Social studies; Islamic Education and Elementary Education.

** For students majoring in science: Science and Mathematics.

Course descriptions**EDU72211 Methods and Curriculum I**

In this course students are introduced to the concept of school curriculum in general and factors influencing it. The students will be also introduced to modern theories in teaching. The course also involves investigation of social and psychological foundations of the curriculum, types of school curriculum, their organization, planning, introduction, criticism and evaluation.

EDU72212 Methods and Curriculum II

This course is a continuation of MC 72213. Student learn about types of school curriculum, general methods of teaching, curriculum development and planning. The course also provides students with a brief description of studies and research, which tackled curriculum development and evaluation.

EDU72213 Methods of Teaching Primary Stage

In this course, students learn about characteristics of material to be taught, its functions, objectives and current trends in schools. Students also learn about methods of teaching different disciplines and instructional aids used in teaching.

EDU72311 Physical Science

Students in this course are familiarized with characteristics of scientific materials, their functions; objectives of teaching sciences and methods employed in teaching different branches of science. Students get acquainted with aspects of activities and instructional aids used in teaching. The course ends with a look at scientific experiments conducted in labs.

EDU72312 Social Studies

This course aims at providing students with an opportunity to study important social problems and make social education very much relevant to students' concerns about society's daily issues.

EDU72314 Methods of Teaching in Specialization I

This course covers a number of topics: characteristics of material to be taught; functions, objectives and methods in preparation of material for teaching. The course also looks at teacher preparation and qualities of a good teacher.

EDU72315 Methods of Teaching in Specialization II

This course is a detailed study of methods of teaching in the field of specialization, and the instructional aids employed to reinforce the effectiveness of these methods. The course also allows students an opportunity to apply these methods in a classroom setting and evaluate pupils' progress.

EDU72316 Design and Production of Instructional Aids

This course covers a number of topics: concept of instructional aids, their characteristics, elements, and resources, in addition to curriculum, and production of simple aids for classroom use.

IC. Electives courses (6 credits)

Course #	Course title	Credit hours	Prerequisite
71214	Theories of Learning	3	-
71413	Principles of Psychological and Educational Counselling	3	-
71455	Seminar	3	-
71456	Principles of Educational Supervision	3	-
72351	Special Education	3	-
72456	Curriculum Design	3	-

ID. Ancillary major requirements:

These requirements are divided into six groups-

1. Methods of Teaching Science courses

All community college diploma holders, in the Department of Teaching Methods, must

complete the following courses:

Course #	Course title	Credit hours	Prerequisite
22105	General Physics I	3	-
22106	General Physics II	3	-
22242	Modern Physics	3	-
23101	General Chemistry I	3	-
23102	General Chemistry II	3	-
23234	Organic Chemistry (for College of Educational Sciences)	3	-
24101	General Biology I	3	-
24102	General Biology II	3	-
24301	Ecology	3	-

2. Methods of Teaching Mathematics courses

All community college diploma holders, in the Department of Teaching Methods, must complete the following courses:

Course #	Course title	Credit hours	Prerequisite
21101	Calculus I	3	-
21102	Calculus II	3	-
21201	Calculus III	3	-
21211	Principles of Mathematics	3	-
21212	Principles of Modern Analysis	3	-
27120	Introduction to Computer	3	-
21241	Principles of Linear Algebra	3	-
21243	Modern Algebra I	3	-
21343	Principles of Numerical Theory	3	-

3. Methods of Teaching English courses

All community college diploma holders, majoring in Methods of Teaching English, must complete the following courses:

Course #	Course title	Credit hours	Prerequisite
32111	College I	3	-
32112	College II	3	-
32201	Conversation	3	-

32202	Advanced Grammar	3	-
32220	Oral Communication	3	-
32230	Phonetics	3	-
32231	Introduction to Linguistics	3	-
32331	Contrastive Linguistics	3	-
32240	Structure of English Language	3	-

4. Methods of Teaching Social Studies courses

All community college diploma holders, majoring in Methods of Teaching Social Studies, must complete the following courses:

Course #	Course title	Credit hours	Prerequisite
33213	History of Early Islam	3	-
33111	History of Modern Thought	3	-
33414	History of Contemporary Thought	3	-
34111	Geography of Palestine	3	-
34423	Geopolitics	3	-
34312	Principles of Demography	3	-
35112	Arab Society	3	-
35416	Anthropology	3	-
33213	History of Early Islam	3	-

5. Methods of Teaching Arabic courses

All community college diploma holders, in the Department of Teaching Methods, majoring in Methods of Teaching Arabic, must complete the following courses:

Course #	Course title	Credit hours	Prerequisite
31111	Introduction to Literary Appreciation	3	-
31214	History of Per-Islamic Literature	3	-
31312	Syntax II	3	-
31211	Morphology	3	-
31313	Abbassid Literature-Poetry	3	-
31316	History of Literary Criticism	3	-
31215	History of Islamic Literature	3	-
31215	Modern Literature	3	-
31415	Special Topics in Modern Arabic Literature	3	-

6. Methods of Teaching Islamic Education courses

All community college diploma holders, majoring in Methods of Teaching Islamic Education, must complete the following courses:

Course #	Course title	Credit hours	Prerequisite
41112	Introduction to Fiqh I	3	-
41113	Islamic Creed	3	-
41115	Recitation of Holy Qur'an	3	-
41211	Exegesis	3	-
41321	Man In Islam	3	-
41322	Fiqh of Transactions	3	-
41321	Fiqh of Penalties	3	-
41423	Inheritance	3	-
41423	Inimitability of Holy Qur'an	3	-

FACULTY MEMBERS

Full professors

Afnan Darwazeh

Ph.D. in Curriculum,
Syracuse University, USA, 1982.

Jawdat Sa'adeh

Ph.D. in Curriculum and Methods of Teaching Social
Studies, University of Kansas, USA, 1980.

Associate professors

Fawaz Aqel

Ph.D. in Applied Linguistics,
University of New York, USA, 1982.

Ghassan Al-Hilo

Ph.D. in Instructional Supervision,
Ohio State University, USA, 1987.

Assistant professors

Wa'el al-Qadi

Ph.D. in Development of Education,
University of Pittsburgh, USA, 1985.

Susan Arafat

Ph.D. in Methods of Teaching English,
Michigan State University, USA, 1988.

Mahmoud al-Shakhshir

Ph.D. in Methods of Teaching Islamic Education,
Imam Sa'ud University, Saudi Arabia, 1989.

Salah e-Deen Yaseen

Ph.D. in Methods of Mathematics Teaching,
University of Florida, USA, 1991.

Shehadeh Abdo

Ph.D. in Methods of Science Teaching,
University of Jordan, Jordan, 1995.

Instructors

Mohammed Sawalha

MA. in Applied Linguistics and Translation,
University of Bath, UK, 1982.

DEPARTMENT OF ELEMENTARY EDUCATION

Admission requirements:

To join the Department of Elementary Education, a student must successfully complete Introduction to Psychology 71112; Introduction to Education 71113 and Developmental Psychology 71115. A minimum of 70% must be obtained in the three courses.

1. Requirements for a B.A. degree in Elementary Education:

The Department of Elementary Education offers a single specialization in Elementary Education. All students wishing to obtain a B.A. degree in Elementary Education must complete successfully 137 credit hours which include university, college and department compulsory and elective courses, in addition to “free” courses.

1A. Compulsory courses (69 credits)

Course #	Course title	Credit hours	Prerequisite
73111	Elementary Education	3	-
71254	Educational Psychology	3	71113
71252	Psychology of Play	3	71113
73218	Methods of Teaching Arabic I	3	-
73219	Methods of Teaching Islamic Education I	3	-
73220	Methods of Teaching Mathematics I	3	-
73225	Methods of Teaching Science and Health I	3	-
73227	Methods of Teaching Social Studies I	3	-
73228	Music, Arts, and National Songs	3	-
73300	Supervised Teaching	3	-
73301	Methods of Teaching English	3	-
73372	Children's Problems and Behavior Adjustment	3	-
73315	Methods of Teaching Arabic II	3	73218
73320	Methods of Teaching Mathematics II	3	73220
73325	Methods of Teaching Science and Health I	3	73225
73327	Methods of Teaching Social Studies II	3	73227
71354	Special Group Psychology (slow learners, talented, disabled)	3	71112,71254
73362	Methods of Teaching Islamic Education II	3	73219
71413	Principles of Psychological Counseling	3	73312
73422	Methods of Teaching Physical Education	3	-

73400	Supervised Teaching II	3	73300
72316	Design and Production of Educational Aids	3	71112
73418	Seminar	3	73400

1B. Elective courses (Students may choose 9 credits from this group)

Course #	Course title	Credit hours	Prerequisite
73214	Child Thinking and Language Development	3	-
72313	Educational Sociology	3	-
72317	Classroom Management	3	-
72352	Evaluation in School	3	-
72213	Methods of Teaching in Elementary Stage	3	-
71411	Psychological and Mental Tests	3	71114, 71112
73459	Kindergartens	3	71112

Course descriptions

ELE73111 Elementary Education

This course covers a number of topics: nature, importance, philosophy, and problems of elementary education; factors influencing it; curriculum; achievement, teachers' efficiency, psychological fundamentals of child's personality and factors influencing its formation; elementary stage curriculum; methods of teaching; problems of elementary education (dropout, slow learning, realism, automatic upgrading; combined grades, teacher's weakness, overcrowded classes, and weakness of administrative apparatus).

ELE73214 Child Thinking and Language Development

This course aims at introducing students to children's mental growth, theories on mental growth especially those of Piaget and Bruce.

ELE73218 Methods of Teaching Arabic I

This course has two goals. The first is to provide the student with linguistic foundations; the second is to introduce the students to methods of teaching Arabic. This includes objectives, functions and techniques of teaching; grammatical rules, reading assignments, literary studies; analysis of first, second and third grades' textbooks; instructional aids; correction of language in lower elementary stage.

ELE73219 Methods of Teaching Islamic Education I

This course covers concepts and foundations of Islam, religious practices and Ibadat,

values and morals in Islamic education and their reflection on the society. The course also introduces the hows of teaching the Holy Qur'an, prophetic teachings, Islamic creed, fiqh, and worship. The course ends with an analysis of Islamic education textbooks in the primary grades and the methods of teaching them.

ELE73220 Methods of Teaching Mathematics I

The aim of this course is to develop student's ability to understand scientific and behavioral material to be able to teach it in the first primary stage. This includes numbers, simple mathematical operations: addition, subtraction and division. The course also covers the hows of teaching percentages, ratios and planning for the teaching of the first primary stage.

ELE73225 Methods of Teaching Science and Health I

This course begins with an attempt to understand the concept of science, its ways, methods of its teaching; properties of material, molecule theory; forms of energy, nature of earth, weather, health, pollution, planets and stars.

ELE73227 Methods of Teaching Social Studies I

This course investigates the concept of social studies in terms of their methodologies, goals and dimensions: mental, social, personal and emotional. The course also looks at basic concepts and principles in social studies, namely, history, geography, sociology, politics, economics, and society. Emphasis is placed on methods of their teaching and preparation.

ELE73228 Music, Arts, and National Songs

This course aims at introducing students to music education and its role in the school curriculum. Students will also learn the methods of teaching music in schools including the teaching of drawing, painting, and manual and technical works.

ELE73300 Supervised Teaching I

This course includes practical teaching of 45 hours in primary stage under the supervision of a school teacher and principal and the follow up of a department instructor.

ELE73301 Methods of Teaching English

Students in this course learn about theories and practices necessary for the teaching of English curricula. This is in addition to setting of plans, objectives, programs for tutoring weak learners.

ELE73372 Children's Problems and Behavior Adjustment

This course aims at providing school teachers with a scientific background pertinent to identification of psychological problems facing youngsters, the hows of their diagnosis and treatment. Emphasis will be placed on problems directly related to school and family roles in social upbringing, and the importance of bringing about sound mental health among pupils.

ELE72313 Educational Sociology

This course aims at providing students with an opportunity to get acquainted with the nature of the existing relationship between social knowledge and society educational system. This implies employing this knowledge and social theories in the process of system analysis and educational institutions including social interactions in these institutions. The course will emphasize the impact of these interactions on teaching and learning processes and social processes in general.

ELE73315 Methods of Teaching Arabic II

This course covers a number of topics: Concept of language and psychology; language acquisition theories; basic skills in Arabic (reading, writing); methods of teaching; linguistic patterns and structures and methods of teaching them; textbook analysis for fourth, fifth and sixth grades. The course also explains the hows of teaching Arabic in these grades, methods of evaluation and testing techniques.

ELE73317 Classroom Management

In this course, students learn about principles and techniques of group organization and instruction, ways of establishing group cohesion, and theories and methods of handling individual and group behavior and learning in classroom setting. Students also learn about the hows of running schools.

ELE73320 Methods of Teaching Mathematics II

This course is a study of methods, materials and aids used in the teaching of mathematics. It is also a study of objectives, concepts, and classroom procedures with special emphasis on selection, preparation and use of teaching materials including lesson plans and multimedia aids, and evaluation process and testing.

ELE73325 Methods of Teaching Science and Health II

This course aims at enabling students to understand scientific phenomena properly. The course places an emphasis on objectives, problems, procedures, and methods of teaching science. Students will learn about preparation of plans, use of demonstrations, experiments, science curriculum projects and reference materials. Students are also furnished with a scientific background about physical phenomena in the universe.

ELE73327 Methods of Teaching Social Studies II

Like similar courses, this course also studies methods and materials used in the teaching of social studies in elementary education. Students are also acquainted with theoretical and practical approaches to social studies. By the course end, students should be able to successfully plan, implement and evaluate classroom instruction in these areas.

ELE72352 Evaluation in School

This course is a survey and examination of basic principles and techniques of testing and evaluation in the educational process. The focus is on preparation, use and analysis of school tests and their influence in the learning process, and students' achievement.

ELE71354 Special Group Psychology (slow learners, talented, disabled)

This course covers a number of topics: slow learning, mental handicap and giftedness. The course seeks to help students identify intellectual, psychological, physical, and emotional characteristics of students belonging to these categories. Emphasis is placed on diagnosis, etiology assessment, and treatment (intervention) of these cases.

ELE73362 Methods of Teaching Islamic Education II

This course focuses on the teaching of Islamic education disciplines in the context of a systematic integrated approach. The course highlights elements of Islamic education curriculum in the fourth, fifth and sixth grades. It also illustrates objectives, activities and evaluations used in these grades. Furthermore, students will design lesson plans, get training on the hows of delivering model classes and using technology in instruction—using computer and other aids in education.

ELE73400 Supervised Teaching II

Students, in this course, finish 45 hours of teaching at a junior (upper) primary stage under the supervision of a school teacher and an instructor from the College of Educational Sciences.

ELE71413 Principles of Psychological Counselling

Topics covered in this course are components of guidance, and psychological counselling, its objectives, foundation, fields, theories and methods and styles (individual and group); behaviorism of playing and education. In addition, students learn about methods of data collection, follow up, observation, case study, subjects, practical procedures in psychological guidance and counselling; educational counsellors (their qualities, roles and references); preparation of counselling programs and treatment of students' problems.

ELE72316 Design and Production of Educational Aids

This course examines the concept of instructional aids, their elements and characteristics, instructional resources, and production or development of instructional aids for their use in teaching.

ELE73418 Seminar

This course covers a number of topics: concept of educational research and its types; action research; selection of topics and research outline preparation and research writing and documentation. Students are expected to submit papers on elementary education and discuss them with their instructors and classmates.

ELE73422 Methods of Teaching Physical Education

Students receive instruction on both educational and scientific foundations to be considered in methods of teaching modern physical education in primary stage. The course includes a number of topics: students' different stages of growth, characteristics of each; physical exercises & methods of teaching them; methods of training pupils on these exercises and techniques of teaching rhythmic body movements; production of a physical education lesson and introduction of small games.

ELE73459 Kindergartens

This course aims at acquainting students with skills and methods necessary for teaching preschoolers. The course discusses the creation of a safe and comfortable physical setting or environment for preschool children.

FACULTY MEMBERS**Associate professors**

Ali Habayeb

Ph.D. in Elementary Education,
University of Sunny at Albany, USA, 1988.

Assistant professors

Sana' Awartani

Ph.D. in Translation and Linguistics,
University of Florida, USA, 1996.

Fawzi al-Masa'id

Ph.D. in Educational Super vision,
Islamic University of Um Durman, Sudan, 1997.

Instructors

Sami al-Kilani

M.A. in Science Education,
An-Najah National University, Nablus, Palestine, 1991.
M.S.W. In Social Work, McGill University, Montreal, Canada, 2000

Lecturers

Mahmoud Ramadan

M.Sc. in Science Education,
An-Najah National University, Nablus, Palestine, 1995.

DEPARTMENT OF PHYSICAL EDUCATION

1. Admission requirements-(dept. code #4)

The Department of Physical Education offers a single specialization in physical education. Students wishing to obtain a B.A. degree in physical education must successfully complete 142 credit hours which include university, college and department compulsory and elective requirements as well as “free” courses.

1A. Compulsory theoretical courses (35 credits)

Course #	Course title	Credit hours	Prerequisite
74150	Health Education	3	-
74155	Introduction to Anatomy	3	-
74160	Physical Psychology	3	-
74243	Physical Education Curriculum	3	-
74250	Kinesiology	3	74155
73422	Methods of Teaching Physical Education	3	74330
74342	Recreation	3	-
74351	Physiology (Physical training)	3	74155
74354	Sports Injuries and Physiotherapy	3	74351
74441	Scientific Research in Sports	3	71114
74444	Organization and Administration in Physical Education	3	-
74451	Measurements and Evaluation in Physical Education	3	71114
74452	Physical Training	2	74351
	Total	35	

1B. Compulsory practical courses (38 credits)

Course #	Course title	Credit hours	Theory hrs	Practical hrs	Prerequisite
74110	Football I (males only) *	2	1	2	-
74111	Basketball I	2	1	2	-
74112	Handball I	2	1	2	-
74113	Volleyball I	2	1	2	-
74120	Athletics	2	1	2	-
74121	Gymnastics I	2	1	2	-
74122	Swimming I	2	1	2	-

74123	Rhythmic Movement I (females only)*	2	1	2	-
74210	Football II (males only)*	2	1	2	-
74211	Basketball II	2	1	2	74110
74212	Handball II	2	1	2	74111

1B. Compulsory practical courses (38 credits)

Course #	Course title	Credit hours	Theory hrs	Practical hrs	Prerequisite
74213	Volleyball II	2	1	2	74112
74220	Athletics II	2	1	2	74113
74221	Gymnastics II	2	1	2	74121
74222	Swimming II	2	1	2	74122
74223	Rhythmic Movement II (females only)*	2	1	2	74123
74230	Physical Exercises I	2	1	2	7430
74330	Physical Exercises II	2	1	2	74452
74430	Field Training I *	2	-	8	74341
74431	Field Training II *	2	-	8	74430
74130	Physical Fitness	2	1	2	-

***N.B.**

Credit hours are calculated after crossing out Football I & II for female students, thus bringing total credits to 38.

Total credit hours are calculated after crossing out Rhythmic Movement I & II for male students, thus bringing total credits to 38.

*Field training: one class per week, in first semester of fourth year students.

*Practical teaching for one month in schools. Each student has to teach physical education in a public school in the 2nd semester of the fourth year.

1C. Elective (practical) courses (10 credits)

Course #	Course title	Credit hours	Theory hrs	Practical hrs
74124	Badminton	2	1	2
74125	Table Tennis	2	1	2
74126	Court Tennis	2	1	2
744224	Weight Lifting	2	1	2
74321	Wrestling	2	1	2
74322	Boxing	2	1	2
74323	Karate	2	1	2
74324	Popular and Minor Games	2	1	2
74325	Cruising and Outdoor Life	2	1	2

Course descriptions**PED73422 Methods of Teaching Physical Education**

This course is a description of modern teaching methods and how they can be applied in physical education in addition to setting up daily, semesterly and annual plans for physical education teaching.

PED74110 Football I

This course aims at helping students acquire basic kinetic skills in football: ball control, ball kicking, football kicking, ball kicking with head, ball jogging, passing ball, aiming, tricking, deluding and border throwing.

PED74111 Basketball I

This course aims at helping students acquire basic kinetic skills in basketball: passing skills, ball hopping, ball aiming, ball reshuffling, and readiness position.

PED74112 Handball I

Like other courses, this course teaches students basic kinetic skills in handball: ball passing, ball aiming, ball batting and reception.

PED74113 Volleyball I

The aim of this course is to help students acquire basic skills necessary in volleyball: receiving and scoring the ball; preparation, sweeping strike, cover and resistance walls.

PED74121 Gymnastics I

Students, in this course, acquire basic skills necessary in gymnastic exercises. Students will be trained on equipment: floor exercises, vaulting horse (men and women) and parallel bars (men only).

PED74123 Rhythmic Movement I

Female students, in this course, acquire basic kinetic skills for different body organs without using equipment. The course focuses on movements of hands and legs.

PED74130 Physical Fitness

This course helps students to acquire basic skills that develop muscles and their movements with particular emphasis on developing one's strength, speed, endurance, elegance and flexibility in addition to endurance of power, speed and power characterized by speed.

PED74150 Health Education

This course discusses the importance of physical education in protection from diseases. It also discusses the relationship between physical education and health education as part of general education, nutrition and hygiene. The course also introduces skills necessary to deal with accidents, emergencies and injuries. The course ends with a look at measures to ensure personal safety at home, school and community.

PED74155 Introduction to Anatomy

This course provides a description of body systems and anatomical principles applied in physical education and sports. It also highlights kinetic system (muscles, bones and joints).

PED74160 Physical Psychology

This course covers a number of topics: historical development of physical psychology; motivation; personality and attitudes. It also deals with evaluation and measurement used in the field of physical psychology and sportsmen's psychological preparation.

PED74210 Football II

This course is continuation of Football I 74110. It builds on skills learned in Football I. Students in this course acquire motor skills; coaching; rules of games; attacking and defense tactics.

PED74211 Basketball II

This course aims at helping students acquire basic skills related to rules of the game; planning the game; psychological preparation of sportsmen, and coaching.

PED74212 Handball II

This course aims at helping students acquire basic skills necessary in this game in terms of rules, defense and attack plans and coaching.

PED74213 Volleyball II

Like previous courses, this course aims at helping students acquire skills necessary in this

game. These skills include plans for playing, rules of the game, defense and attack plans, and coaching.

PED74221 Gymnastics II

Students in this course acquire a number of basic skills: Pommel horse, horizontal position (men only); floor exercises, balance beam (women only). Students receive training on how to exercise on the equipment. Students also learn about game rules, and coaching skills in gymnastics.

PED74223 Rhythmic Movement II

This course begins with a refreshment of skills learned in Rhythmic Movement I. Female students also learn music accompanying rhythmic skills and the use of equipment.

PED74230 Physical Exercises I

This course aims at introducing students to the basics of writing exercises and applying them. They also learn about types of exercises and the creation of a number of simple exercises without using equipment.

PED74243 Physical Education Curriculum

Students, in this course, receive instruction on characteristics and functions of curriculum in physical education. The course presents physical education curricula in all school stages and explains how lesson planning is prepared in physical education.

PED74252 Kinesiology

This course presents forms and directions of movements, straight and closed movements in sports. The course also provides a kinetic analysis of some skills in several games: Volleyball; basketball; football; handball; swimming; gymnastics; jogging; jumping; throwing and leaping.

PED74330 Physical Exercises II

This course builds on PED 74230. Emphasis is placed on performance of a group of collective and paired exercises. Students are also trained on how to use equipment needed in performing some exercises.

PED74342 Recreation

This course stresses the importance of recreation for both individuals and societies; leisure time; recreation objectives, types, fields and characteristics of each type.

PED74351 Physiology of Physical Training

This course is a study of responses and adaptation to physical training. It is also a study of the skeletal muscle, in terms of structure and function; energy production systems, physiological theory in physical training; impact of physical training on body organs; factors influencing physical performance; nutrition and exercising, weight control and body structure.

PED74354 Sports Injuries and Physiotherapy

This course places an emphasis on types of sports injuries, their causes and ways of their prevention. The course also looks at rehabilitation programs for sports injuries and physiotherapy appropriate for their treatment.

PED74441 Research Methodology in Physical Education

This course is a study of the development of research in physical education. It also introduces steps and methods of research, tools used for data collection; statistical methods used for hypothesis testing.

PED74444 Organization and Administration in Physical Education

This course is designed to introduce students to administrative principles of physical education; ways of running internal and external school sports activities and programs.

PED74451 Measurement and Evaluation in Physical Education

Topics covered in this course are bodily, skillful physiological and psychological measurements in physical education, and ways or criteria of preparation in physical education.

PED74452 Physical Education

This course covers a number of topics: concept, development, principles, components and methods of physical education. It also covers integrated comprehensive preparation of a sportsman: bodily, skillful, theoretical, psychological and operational. This is in addition to planning physical training, ways for preparation of physical training programs and proper selection of sportsmen.

FACULTY MEMBERS

Associate professors

Imad Abdel Haq Ph.D. in Physical Training,
Russain Academy for Physical Education,
Moscow, Russia, 1989.

Abdel Naser al-Qadoumi Ph.D. in Physical Training,
University of Bucharest, Bucharest, Romania, 1996.

Assistant Professors

Walid Khanfer Ph.D. in Physical Education Curricula,
University of Bucharest, Bucharest, Romania, 1997.

Subhi Issa Ph.D. in Physical Education,
University of Al-Basra, Basra, Iraq, 1998.

Bader Dweikat Ph.D. in Physical Education,
University of Science and Technology, Sudan, 2003.
M.A. in Physical Education,
An-Najah N. University, Nablus, Palestine, 1995.

Lecturers

Malik Shaker M.A. in Physical Education,
Ohio State University, USA, 1982.

Yahya Khader M.A. in Physical Education,
Ohio State University, USA, 1986.

Instructors

Saba Jarrar M.A. in Gymnastics,
University of Jordan, Amman, Jordan, 1993.

Mu'in Hafez M.A. in Physical Education,
University of Science and Technology, Sudan, 1999.

Raghidah Mifleh M.A. in Physical Education,
University of Jordan, Amman, Jordan, 1999.

Rasem Younes M.A. in Physical Education,
Ohio State University, USA, 1983.

Research and Teaching Assistant

Irena Abdel Haq B.A. in Physical Training,
Russain Academy for Physical Education, Moscow, Russia 1989.

COLLEGE OF ECONOMICS AND ADMINISTRATIVE SCIENCES

Introduction

The College of Economics and Administrative Sciences, established in 1978, began classroom instruction in 1978/1979. At the beginning, the college had two departments: Department of Business Administration and Department of Accounting. To meet the changing needs of the Palestinian society and to contribute to the economic and social development process, the college created another four departments all leading to a bachelor's degree, and three graduate programs.

Academic programs

The college offers a number of academic programs all leading to undergraduate and graduate degrees in several fields.

Undergraduate programs

1. Accounting
2. Business Administration
3. Economics
4. Political Science
5. Banking & Finance
6. Marketing

Graduate programs

1. Business Administration
2. Economic Policy Management
3. Political Planning and Development

College-Community Relationship

The college aims at educating students to meet the needs of the local and Arab markets in the fields of economics and administrative sciences, and to contribute to the development process. The college has taken upon its shoulders the burden of interaction with society in economic, management and political spheres. The college staff is involved in a considerable number of studies directly related to administrative, economic and social problems in the Palestinian areas. They also participate in academic conferences, symposia, workshops and seminars inside and outside the country.

Undergraduate Degree in College of Economics and Administrative Sciences

Study Plan:

1. College requirements

Every student should, in the first year, successfully complete 11 courses totaling 33 credit hours.

Course #	Course title	Credit hours	Prerequisite
111101	Introduction to Law	3	-
21103	General Mathematics	3	-
27120	Introduction to Computer Science	3	-
51113	Basics of Typing (9 hrs per week)	None	-
51127	Management I	3	-
52121	Accounting I	3	-
53121	Microeconomics	3	-
53122	Macroeconomics	3	-
53123	Statistics I	3	-
54123	Political Science	3	-
56121	Finance	3	-
57121	Marketing	3	-
	Total	33	

2-Departments' requirements: see relevant dept.

3-“Free” courses (6 credit hours)

A student may choose these courses from the university departments. Courses should also have the same level. For example, Descriptive Statistics doesn't have the same level as Principles of Statistics.

Conditions and requirements for specialization in the college departments:

When a student decides to join a college department, the following criteria are taken into consideration as a basis for his/her major:

A. Student's desire and ability.

B. Successful completion of college requirements for specialization. These requirements are Management I 51121; Accounting I 52121; Microeconomics 53121; Macroeconomics 53122; Political Science 54121; Finance 56121; and Marketing 57121.

C. GPA in the departments' courses: see department concerned.

D. Final averages in items B and C are the basis for students' acceptance. The college council has the final saying in this regard.

E. Students wishing to join any of the college departments must successfully complete a minimum of 30 credit hours leading to a bachelor's degree.

F. All students in the college are expected to declare their majors within the first three semesters. If a student fails to meet the conditions for specialization, according to deadline, he/she will lose his/her right to choose a major of his/her interest. The college council has the final say concerning his/her major.

G. A student may repeat one of his/her department requirements (see Article III/A) of B.A. Degree Requirements 1998/1999) if he/she wishes to raise his/her average required for his/her major of his/her own choice. However, a student may do so only in the first three semesters of his/her admission into the college.

H. A student may declare his/her major in coordination/with the help of his/her advisor. After meeting the criteria for admission into the department of his/her own choice, a student must complete an application form available in the college which in its turn in forms the Deanship of Registration and Admissions in writing.

I. If the student fails to be admitted to the department of his own choice, he/she may repeat one of the required courses for specialization in the department according to Article 13A. of the B. Sc. Degree Requirements 1998/1999.

J. A student is accepted in the department after he/she has met the conditions for specialization.

K. A student may change his/her major to another, in the same college, if he/she has met the conditions of admission into the new department that he/she wishes to join.

*The college determines the number of students who may be admitted to any of the six departments at the beginning of the university academic year.

College course descriptions

ECO51121 Management I

The aim of this course is to develop the student's concepts of management, its principles, methods, theories, schools, fields, problems and elements. It also aims at providing students with information about its history, and philosophy, processes, planning, organization and evaluation. The course is also planned to keep the student abreast of recent developments in management, diagnosis of some management problems and taking rational decisions.

ECO52121 Accounting I

The goal of this course is to acquaint students with the basic principles and concepts which represent the framework of accounting. The course will specifically discuss the meaning of accounting, its historical development, and its importance in taking economic decisions, and its basic theories on which financial principles and procedures and final financial operations are based. All this is for the purpose of serving the management and other parties involved in making economic decisions, related to the company. However, this is on the assumption of accuracy and validity of financial operations during the year.

ECO53121 Microeconomics

This course deals with the nature of economic principles, its scope, bases and concepts pertinent to behavior analysis of producer and consumer (microeconomic units). The course also deals with theory of the firm, price determination, distribution theory, allocation of resources and market mechanism and value concept.

ECO53122 Macroeconomics

Topics covered in this course include basic principles of macroeconomics, concept of national product, national income, their measuring techniques, economic fluctuation and economic policies and principles used to encounter these fluctuations. The course also introduces principles of foreign trade.

ECO53123 Statistics I

This course covers a number of topics: basic principles of statistics, methods of data collection and presentation, measures of central tendency and dispersion, statistical distributions, and testing of hypotheses.

ECO54121 Political Science

This course acquaints students with the basic concepts of political science, areas and goals of this science, divisions of this science, the link between theory and structures, function and performance of political systems.

ECO56121 Finance

This course aims at introducing student to the time value of money. The course is also a study of the relationship between returns and risks, companies' appropriate financing foundations, ways of measuring risks and their types, profit policies adopted by companies, cost of capital, and optimum capital structure.

ECO57121 Marketing

This course is an analysis of the elements of marketing mix: Product pricing, promotion, and distribution decisions. The course aims at providing students with economic and marketing analytical skills of marketing environmental elements, to make appropriate decisions, and marketing skills of non-profit services, material distribution and customer services.

UNDERGRADUATE PROGRAM IN BUSINESS ADMINISTRATION

Requirements for admission

To major in Business Administration, a student must successfully complete Principles of Management I 51121 and Principles of Management II 51122. A minimum of 70% must be obtained in each of the two courses:

I. Requirement for a B.Sc. in Business Administration

The Department of Business Administration offers a single specialization in Business Administration. Students wishing to obtain a B.Sc. degree from this department must successfully complete 131 credit hours. These include university, college, and department compulsory and elective courses in addition to “free” courses (six credit hours).

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
51111	Research Methodology	3	-
51122	Principles of Management II	3	51121
51210	Business Correspondence in English	3	10325
51220	Human Resources Management	3	51122
51224	Purchase and Storage Management	3	51122
51225	Strategic Planning	3	51122
51310	Production Operations Management	3	21103
51312	Organization Theory	3	51122
51315	Organizational Behavior	3	51122
51360	International Business Management in English	3	10325
51412	Operations Research	3	21103
51450	Graduation Project	3	51111
52122	Principles of Accounting II	3	52121
52231	Cost Accounting	3	52122
53124	Palestine Economies	3	53122
56313	Financial Management	3	52122
111250	Commercial Law	3	111101
	Total	51	

IB. Elective courses (Students may choose 18 credit hours)

Course #	Course title	Credit hours	Prerequisite
51212	Financial Mathematics	3	21103
51251	Management Thought	3	51122
51259	Sales Management	3	57121
51353	Management Environment	3	-
51354	Office Management and Organization	3	51122
51356	Management Control	3	51122
51359	Management of Microenterprises	3	51122
51410	Strategic Management in English	3	51122 + 10325
51411	Policies and Decision Making	3	51122
51424	Financial Business Analysis	3	51424+52231
51425	Training and Management Development	3	51122
51429	Production Planning and Control	3	51311
51431	Contemporary Management Issues	3	-
51432	Project Logistics Management	3	51122
51436	Industrial Psychology	3	51315
51451	Insurance Theory	3	51212
51455	Bank Management	3	51122
51458	Information Systems Management	3	51122 + 27120
51460	Islamic Banks	3	51122
53415	Economic Feasibility and Project Evaluation	3	56313
56212	Financial Institutions Management	3	51122 + 56212
56312	Investment Analysis and Management	3	56313 + 56212
57222	Marketing Management	3	51221
57225	Commercial Promotion	3	51221
57329	Consumer Behavior	3	51221

Course descriptions**BUS51111 Research Methodology**

This course is a study of research basic concepts, methods and tools used in business management. The course aims at helping students become aware of new methods of research and their applications. Students are expected to write papers based on skills acquired in the course.

BUS51210 Business Correspondence in English

The purpose of this course is to develop the student's ability in writing business letters

properly without mistakes. The course teaches students how to write business letters in terms of forms, styles and types. The course also teaches students how to apply for vacancies, how to write a C.V. or resume. The course ends by teaching students how to write sales offers for products.

BUS51212 Financial Mathematics

This course aims at acquainting students with the concept of simple and double interest, ways of its calculation, bill discount, repayment of loans in installments, types of payments, current accounts, settlement of loans, issuing bonds and evaluation, ways of their consumption, consumption of fixed assets, and the relationship of fixed asset consumption methods with income tax.

BUS51220 Human Resources Management

This course is a critical look at organizations' principles, methods and resources. Topics covered include strategic human resources development and management for effective employee training and education. It also discusses management issues on employment recruiting, testing, selection and placement, job evaluation, wage and salary administration, labor relations and communication, performance evaluation, benefits and services, discipline, motivation, morale, accident prevention and safety.

BUS51224 Purchase and Storage Management

This course is a study of the concept of purchases and warehouses. It aims at helping students acquire academic research skills in purchase and storage jobs. The course also aims at developing student's intellectual curiosity and allowing them to acquire objective scientific trends in their daily interaction. The course also attempts to link theory with practice through its emphasis on importance of purchase and storage.

BUS51225 Strategic Planning

This course aims at providing students with the necessary skills to deal with the near and distant future strategies. This will be through the analysis of environmental data influencing work in the institutions and the identification of things affected by these data and their interactions.

BUS51251 Management Thought

The course aims at putting contemporary management thought in its correct framework in terms of the ideological base it depends on and its correlation with social sciences and humanities which came out as a result of the Industrial Revolution in Europe and America. Moreover, the course provides a critical analysis of the different aspects of this thought and how these aspects are linked to behavioral patterns prevailing in industrialized societies. The course also explains the extent to which modern management theories are able to challenge problems of development in the Third World.

BUS51259 Sales Management

The purpose of this course is to provide the student with the necessary skills to predict sales and manage sales operations. To this end, students will be introduced to statistical

methods used in this field and ways followed in management of personal sales operations.

BUS51310 Production Operations Management

This course highlights activities related to production. It explains the relationship between production and the market, competition and the state. It also teaches students the hows of managing projects successfully and the scientific studies conducted before, during and after the production process. The course also explains production lines, compares them & illustrates site of projects and factors that need to be taken into consideration. Further, the course also shows when machinery needs to be replaced and the amount of material the factory may keep. All this will be done by combining quantitative and descriptive spheres.

BUS51312 Organization Theory

Students, in this course, learn about the organizational process through both modern and classical organization theories. They will also learn about principles of organization design and structure of organizations, internal and external environments of organizations, sources and delegation of authority, official and unofficial groups, disputes, organizational development and organization's sustainability in times of changes.

BUS51315 Organizational Behavior

This course begins with an analysis of organizational behavior and its determinants. Then it moves to study behavioral theories, personality and its nature, concept of perception and trends, values and role of groups and their influence in human behavior. The course also covers administrative processes, organizational behavior and climate, development of change, analysis of innovation and creativity in management.

BUS51353 Environment Management

This course investigates political, economic and social conditions representing the environment. The course argues that education is the cornerstone in building management and developing man. The course will hold a comparison and make an analysis of what should be in the current situation in order to identify the role and influence of factors in management. The course ends by arguing that management seeks change to the better, and this requires change of management, institutions and the environment.

BUS51354 Office Management and Organization

This course attempts to give a clear idea of office as a department or an administration in an institution which plans, organizes and markets work in that institution. The course also dwells on secretarial work in institutions which helps in delivering better services and cutting short procedures in clerical/paperwork.

BUS51356 Management Control

This course focus on the supervision of institutions' facilities. Theoretically, the course seeks to identify main ideas related to administrative law and general management

science. The course also raises topics related to the idea of group and unified management work which is in its turn related to the state authority. Practically, the course looks at the ways of guaranteeing respect of legitimacy, protection of public interest concerning facilities and their positive and negative work.

BUS51359 Microenterprise Management

Students, in this course, will learn about the art of managing microenterprises which employ between 10-100 people. The course will particularly emphasize concepts, analytical tools employed in small enterprises and practical case studies.

BUS51360 International Business Administration in English

This course aims at enriching students' English business terms. It also aims at introducing students to methods and techniques followed in managing business activities at the external market level. This includes the study of international markets, their conditions and ways of getting access to them.

BUS51410 Strategic Management

This course aims at providing students with critical skills necessary for long-term management. To this end, the course will train students on how to analyze environmental data related to long-term planning. Additionally, the course aims at providing students with modern management terminology. Finally, the course will teach students the necessary skills needed for the analysis of cases and decision-making in the light of results analysis.

BUS51411 Policies and Decision Making

This course sheds light on the role of the higher/senior administrations in institutions. This depends on analysis and linking elements together to arrive at results. The course endeavors to focus on integration and comprehensiveness. The course also capitalizes on student's knowledge acquired in other courses. Students, in other words, are expected to invest previously acquired knowledge in this course. Finally, the course introduces students to the importance of the quantitative aspect of the decision-making process in modern management.

BUS51412 Operations Research

This course introduces basic principles of operations research with special emphasis on administrative aspects. The course also teaches the student how to calculate quantity data and enter them as a major element in decision making process, thus achieving maximum profit at the lowest cost possible.

BUS51424 Financial Business Analysis

This course is a study of methods and tools of financial analysis as a basis for objective analysis and discussion oriented towards items of financial statements. The course dwells on relationship among these statements and compares them with historical criteria and patterns.

BUS51425 Administrative Development and Train

This course is an attempt to provide students with the necessary knowledge about the nature and importance of manpower training and administrative development. The course also endeavors to provide students with the methodology according to which the development process of training plan can be done, and in the light of which the process of administrative policy can be completed in the long run. The course ends with an emphasis on necessary skills for running, implementing, and evaluating training programs.

BUS51429 Production Planning and Control

The aim of this course is to develop the student's concept of management of production operations in terms of the development of production process, selecting site of project, and design of factory building. The course also explains integrated production systems and the tabulation of main production elements and the analysis of the product's technical structure. The course doesn't ignore the Maximum Retail Price (MRP) system and the planning of industrial material reserves and production capacity, control of production effectiveness and quality control (PAC).

BUS51431 Contemporary Management Issues

This course provides students with the skills necessary for the analysis of local and international management problems. In so doing, students are expected to learn from these experiences in their management of companies and institutions. The instructor will draw examples from experiences of countries and successful and changing companies in the field of management.

BUS51432 Project Logistics Management

Against the background of challenges likely to face projects in the 21 century, namely the problem of managing the project as one part capable of responding to the challenge smoothly, this course aims at providing students with the manner of linking all project logistics in a way that achieves both project objectives and customers' objectives.

BUS51436 Industrial Psychology

This course is an attempt to link psychology with both industry and production. Therefore, the course will focus on surveys of attitudes and opinions, analysis of work nature, and its circumstances, motivations, leadership analysis, and charismatic qualities of leaders. Furthermore, the course will focus on frustration and its causes. Other topics raised in the course include working to develop bosses, context communication in groups and problems influencing it, learning and thinking, problem solving, influence in behavior, analysis of abilities and their measurement, human engineering analysis, management psychology, industrial safety, work accidents, orientation and vocational training.

BUS51450 Graduation Project

This course aims at testing student's ability to analyze management and marketing problems. In coordination with a supervisor, students should choose a topic of their own interest in order to conduct a study. In writing this project, students should include a research outline, methods used, and an analysis of results. The student, upon completion

of the project, should discuss it with his/her supervisor for feedback and approval.

BUS51451 Insurance Theory

This course introduces the student to the meaning of risk, its types, insurance functions, types of insurance, rate policies, insurance premiums, reserves, administrative organization of insurance firms, insurance marketing, insurance policy procedures, settlement of claims and compensation, supervision and control of insurance facilities and reinsurance. The course also explores the impact of insurance on the country's economy, its relationship to trade and industry and its role in investment and finance as well as insurance investment opportunities.

BUS51455 Banking Management

This course begins with an introduction to the banking system, types of banks, commercial bank operations, money creation, sources of financing commercial banks, aspects of employing different direct credit facilities, and analysis of commercial bank budget. Then the course moves to the internal organization of commercial banks, the central bank and its relationship with the commercial banks, and other specialized credit institutions. Finally, the course holds a comparison between commercial banks and Islamic banks.

BUS51122 Management Information Systems

In this course, students will learn about information systems, and their importance in the organization. The course mainly focuses on the importance of management systems and their benefit in determining goals and directing them towards achievement of these goals. In addition, the course highlights information in that it is considered an important element in planning and coordination to make sure the plans are implemented in proper ways. The course also dwells on ways of obtaining necessary information about customers and distributors since it is important in supervision operations. The course ends with some light on stages of information flow.

BUS51122 Principles of Management II

This course is a continuation of Business 51121. It aims at providing the student with the necessary academic background to prepare him/her for specialization in Business Administration. Topics covered are analysis of management systems, schools and modern ideas in management, relationship between management and external environment surrounding it, and nature of managers' responsibilities and management goals.

BUS56313 Financial Management

This course aims at introducing students to the historical development of the financial management role in projects, functions of financial department, profitability, planning, financial planning, financial forecasts and analysis, employment of financial percentages, management of working capital and exchanged assets. The course covers management of short-term financial sources, financial exchange markets, and long-term financial sources (stocks and bonds).

BUS56460 Islamic Banks

This course is an examination of Islamic banks in terms of their establishment philosophy, sources of their finance, their methods, structure of their capital, property right compared with other financial sources. This will be in addition to these banks' investment and activities as opposed to commercial banks.

BUS57222 Marketing Management

In this course, students will develop their concept of marketing, its meaning, and will learn how to identify marketing operations from a management point of view. To this end, the course will give a comprehensive description of marketing activity from a management point of view. It will also explain how this management determines marketing goals, sets up programs and policies to achieve these goals. The course also highlights marketing problems, success of marketing, production and pricing policies and advertising, courses of distribution, relationship between producer, the consumer and the intermediaries, and types of industrial and consumer products. The course also examines the relationship between management of marketing and sales as well as other departments in the firm. The course then concludes with some practical marketing case studies for analysis, and solutions from a marketing and a management point of view.

FACULTY MEMBERS

Associate Professors

Mufeed a-Shami Ph.D. in Business Education-Management Development,
University of Houston, Texas, USA, 1986.

Assistant Professors

Hussein Al-Araj Ph.D. in General Management,
University of Glasgow, UK, 1989.

Lecturers

Suleiman Abu Jamous M.Sc. in Industrial Management,
University of Dallas, Texas, USA, 1979.

Instructors

Nader al-Qaryouti M.Sc. in Personnel Management,
Ein Shams University, Cairo, Egypt, 1989.

UNDERGRADUATE PROGRAM IN ACCOUNTING

Admission Requirements

To join the Department of Accounting, a student must successfully complete Principles of Accounting I 52121 and Principles of Accounting II 52122. A minimum of 70% must be obtained in each of the two courses.

I. Requirements for a B.Sc. degree in Accounting

The Department of Accounting offers a single specialization in Accounting. Students wishing to obtain a B.Sc. in Accounting have to complete successfully 131 credit hours which include university, college and department compulsory and elective courses in addition to “free” courses (six credit hours).

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
52111	Research Methodology	3	-
52122	Principles of Accounting II	3	52121
52211	Company Accounting	3	52122
52213	Financial (Business) Accounting	3	52122
52221	Accounting (in English)	3	52112 + 10325
52231	Cost Accounting	3	52122
52310	Financial Statement Analysis	3	52211
52312	Tax Accounting	3	52211
52314	Government Accounting	3	52122
52321	Intermediate Accounting (in English)	3	52221
52352	Management Accounting	3	52231
52410	Auditing and Accounts Review	3	52312
52413	Accounting Theory	3	52321+52411
52452	Accounting Systems	3	27120 + 52122
52452	Seminar in Accounting	3	52413
52453	Practical Training (32 hrs of field work)	1	52413
53124	Palestine Economies	3	53122
111250	Business Law I (Companies & Bankruptcy)	3	111101
	Total	51	

IB. Elective courses (Students may choose 18 credit hours)

Course #	Course title	Credit hours	Prerequisite
51122	Principles of Management II	3	51121
51412	Operations Research	3	51103
52214	Private Accounting	3	52122
52332	Agricultural Cost Accounting	3	52122
52414	Contemporary Accounting Cases and Problems	3	52321
52421	Advanced Accounting (in English)	3	52413
52423	International Accounting	3	52413
52432	Oil and Minerals Accounting	3	52122
52433	Social Accounting	3	52413
52400	Computer Programming	3	37120
23213	Principles of Statistics II	3	53123
23221	Business Theory	3	53121
53311	Public Finance	3	53122
53415	Project Evaluation and Feasibility Studies	3	56313
56313	Financial Management of Shareholding Companies	3	52312

Course descriptions**ACC52111 Research Methodology**

The purpose of this course is to help students to understand research tools and methods used in administrative sciences and in accounting in particular. The course will acquaint students with the basics of scientific research in accounting. These basics include research proposal design, selection of sample, questionnaire design, means of data collection, analysis of data and hypothesis formulation and testing. By the end of the course, students are expected to have mastered research writing in accounting.

ACC52122 Principles of Accounting II

This course is a continuation of Accounting I. In this course, students will learn how to conduct settlement of different statements of accounts by end of fiscal year. The course also discusses the hows of dealing with accounting mistakes which might be discovered when and after preparing final statements of accounts. Furthermore, the course discusses practical and scientific accounting methods, particularly the American accounting methods.

ACC52211 Company Accounting

This course aims at acquainting students with the necessary accounting procedures to

prove the operations of establishing solidarity companies, prepare their final statements, and distribute their profits or losses among partners. The course also dwells on shareholding companies in terms of their financial activities and their legal parameters, issuance of their shares, distribution of dividends among shareholders. The course ends with a look at issuance of bonds, determination of optimum bond price, and liquidation of shareholding companies from a legal point of view.

ACC52213 Financial (Business) Accounting

The first part of the course deals with accounting in insurance companies. This study includes statements of insurance institutions in terms of bookkeeping, records, and processing of insurance operations. The study also includes investments and how they are dealt with in bookkeeping. The course also looks at the hows of preparing final financial statements of insurance companies. The second part of the course focuses on bank accounting and commercial banks in particular. Students will get a general but a comprehensive idea about importance of banks and their role in development of the country's economy. The course also examines activities/operations of banks' different departments particularly current accounts department and foreign transactions department (currency transfer and credits). Finally, the course will teach students how to prepare banks' financial statements and the main elements forming these statements.

ACC52214 Private Accounting

This course aims at acquainting students with accounting procedures followed in proving financial operations in multi-branch companies. The course, in addition, discusses financial operations belonging to free professionals such as lawyers and doctors, in addition to non-profit institutions and non-government organizations such as charitable societies and clubs.

ACC52221 Accounting (in English)

In this course, students will learn about accounting principles and concepts in English. This enables students to get acquainted with accounting terminology in English, which will help students deal with other courses and cope with the world of work after graduation. The course will also keep students abreast of recent developments in accounting. Students will be exposed to accounting articles in English, dealing with major aspects of accounting.

ACC52231 Cost Accounting

Students, in this course, learn about concepts and analysis procedures to generate cost data for management planning and control. The course will specifically deal with accounting systems used in industrial companies. In this regard, the course will look at elements of costs & their classifications. The course also discusses standard costs and their importance in controlling cost elements. Finally, the course examines some mathematical models, such as linear programming and probability theory, used to help management in taking its economic decisions.

ACC52310 Financial Statement Analysis

This course is a study of financial analysis instruments and methods as a basis for

objective analysis and discussion directed towards items of financial statements. The course also dwells on relationships among different items of these statements in comparison with historical criteria and specific patterns. This will allow students to judge the efficiency of project management and its financial role in the short and long runs.

ACC52312 Tax Accounting

This course is a study of tax accounting characteristics, conditions for imposing income tax on individuals and institutions, and conditions for exempting others from paying taxes. The course holds a comparison between accounting tax and income tax. The course also shows how to test elements in the income tax statement prepared by companies to find about the extent to which the statement matches the tax law rules. The course finally teaches students how to estimate, and collect taxes, and it also introduces students to legal measures followed when it comes to objection, evasion and collection.

ACC52314 Public Accounting

This course is a study of the nature of government/public accounting and its relationship with commercial accounting, the law and accounting foundations used. The course also examines the nature of the state general budget, its breakdown, and stages of its preparation and ways of estimating revenues and expenditures, implementation of general budget and internal control of expenditures. The course ends with a look at debts due to government, bookkeeping, accounting restrictions and stages of external control by the finance ministry and office of accountancy.

ACC52321 Intermediate Accounting

This course covers a number of accounting issues such as ownership of a brand name of an influential company, possession of patent right, development and research expenses, lease contracts, end of service severance payment, expansion in shareholding companies, operations taking place outside the country borders and foreign currencies.

ACC52332 Agricultural Cost Accounting

This course is one branch of cost accounting. In this course, students get acquainted with accounting operations of financial activities carried out by agricultural projects: plant and animal. In this respect, the course examines how to calculate production costs as a result of project activities and how to write financial reports.

ACC52352 Management Accounting

This course is a study of cost accounting applications and related techniques to decision making with emphasis on control and use of internally generated accounting. Topics include cost allocation, variance analysis, budgeting and cost control systems forecast of markets on the basis of available data.

ACC52400 Computer Programming

Students, in this course, get acquainted with Windows programs and various applications of Ms-Office packages. The students also learn about Excel program with emphasis on its application in the fields of statistics and accounting.

ACC52410 Auditing and Accounts Review

This course is a study of common foundation and bases in reviewing and testing process of final statements of accounts and their appendixes prepared by different economic units. Students, in this course, also learn about the auditing process, its structure, and necessary procedures. There is also a study of internal control procedures in these economic units.

ACC52413 Accounting Theory

This course aims at introducing students to aspects and theoretical foundations of accounting procedural concepts and principles. Topics covered in this course include origin and development of accounting, definition of accounting theories, accounting principles and concepts (which represent the theoretical framework of accounting) financial statements, income concepts and their measurement, revenues, expenditures, profits and losses, and nature of accounting problems in the general budget.

ACC52414 Contemporary Accounting Cases and Problems

The aim of this course is to provide students with practical experience and accounting skills directly related and linked with some financial issues. These issues include accounting in the context of inflation, accounting vs human resources, expansion and merger of public shareholding companies.

ACC52421 Advanced Accounting (in English)

This course covers accounting operations, patterns, merger of public holding companies, foreign currency operations, changing financial statement prepared in foreign and local currencies. The course also examines a variety of advanced financial accounting issues such as lease contracts, pension funds, end of service severance payments, etc.

ACC52423 International Accounting

This course deals with the world of international accounting. It provides students with the necessary background to understand issues and problems pertinent to international accounting and the necessary knowledge to analyze and solve these issues and problems.

ACC52425 Accounting Information Systems

In this course, students learn about information systems management, and accounting information systems in particular. Students will learn about the nature of these accounting systems both as comprehensive systems and as branch systems. This includes design of plans to make the system and develop it into a purchasing, selling accounting system as well as wages, salaries, warehouses, production, clearance and responsibility accounting systems, and liability. The course also examines industrial cost systems and computerized accounting systems. Students will learn about the goals of these systems, their procedures and other elements such as reports, control procedures and feedback.

ACC52432 Oil and Minerals Accounting

As the title suggests, this course will endeavor to get the student acquainted with accounting procedures and principles applied when dealing with financial activities of oil producing companies. This allows the student to be knowledgeable in accounting

UNDERGRADUATE PROGRAM IN ECONOMICS

Admission Requirements

To major in Economics, a students must successfully complete Microeconomics 53121 and Macroeconomics 53122. A minimum of 70% must be obtained in each of the two courses.

I. Requirements for a B.A. degree in Economics

The Department of Economics offers a single specialization in the field of Economics. Students who wish to obtain a B.A. degree in Economics must complete successfully 131 credit hours which include university, college and department compulsory and elective courses, in addition to "free" requirements.

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
52122	Principles of Accounting II	3	52121
53111	Research Methodology	3	53122
53124	Palestine Economies	3	53122
53221	Microeconomic Theory	3	53122
53222	Macroeconomic Theory	3	53122
53311	Public Finance	3	53122
53312	Money and Banking	3	53122
53313	International Trade	3	53122
53314	Mathematical Economics	3	53121 + 53122 + 21103
53355	Islamic Economics	3	53122
53358	Industrial Economics	3	53221
53412	Economic Development	3	53222
53413	Seminar	3	-
53415	Feasibility Study and Project Evaluation	3	53121
53452	Econometrics	3	53123 + 53133
53454	Labor Economics	3	5322
111250	Commercial Law	3	11101

1B. Elective courses (Students choose 18 credits)

Course #	Course title	Credit hours	Prerequisite
51122	Principles of Management II	3	51121
52231	Cost Accounting	3	52122
52400	Computer Programming	3	27120
53213	Principles of Statistics II	3	53123
53214	History of Economic Thought	3	53122
53216	Economic Studies (in English)	3	53122
53251	Multinational Corporations	3	53123
53252	World Economic Systems	3	53122
53253	Analytical Statistics	3	53122
53254	Agricultural Economics	3	53122
53315	Banking Economics	3	53121
53351	Developing Countries' Economies	3	53122
53352	Political Economics	3	53122
53354	Israeli Economy	3	53122
53356	Arab World Economies	3	53122
53357	Contemporary Economic Issues	3	53122
53414	Comparative Economic Systems	3	53122
53451	Economic Policy	3	53322 + 53312
53453	Economic Growth Theories	3	53412
53455	Economies of Cooperatives	3	53122
53456	National Income Distribution Theories	3	53222
53457	Palestinian Taxation System	3	53311
56218	Monetary and Financial Markets	3	53312
56313	Financial Management	3	52122
56412	International Finance	3	53312
56450	Economic Planning	3	53221

Course descriptions**ECO53111 Research Methodology**

This course aims at acquainting students with research methods, particularly those used in economics sciences. The course teaches students basic skills necessary in economic studies and research. Topics covered include the hows of writing the introduction to research, hypothesis formulation, and testing, selection of sample, tools of data collection and their analysis.

ECO53124 Palestine Economies

This course is a study of Palestinian's economic resources, economic development and

demographic growth before and after the Israeli military occupation. The course is also a study of major economic sectors and aspects of underdevelopment and imbalances as a results of the Israeli economic policy which aims at making Palestine's economy dependent and underdeveloped.

ECO53150 General Principles of Economics

The purpose of this course is to acquaint non-Economics majors with the nature of economics, and the most important economic concepts and technical terms which help students in understanding and interpreting economic phenomena in their environment.

ECO53214 History of Economic Thought

This course covers a number of topics: origin and development of economics, stages of economic thought with emphasis on contributions of Classicism, Marxism, Neoclassicism and Keynesianism. The course also examines major trends in successive development in economic thought particularly the New Keynesianism and the New Monetary School.

ECO53216 Economic Studies (in English)

This course aims at enriching students' economic terms in English. This will be through the extensive study and discussion of economic texts.

ECO53221 Microeconomics Theory

This course is a study of economic behavior of microeconomic units and the analysis of conditions for balance of these units. The course also examines price theory in different markets, methods of behavior and balance analysis of microeconomic units.

ECO53222 Macroeconomics Theory

Topics covered in this course include concept of measuring national income and its methods, national product, total supply and demand, general balance in the national economic markets of products, labor and money, and the dynamics of general economic activity and growth, inflation, inflationary recession issues. The course ends with a look at economic activity with foreign countries and economic policy.

ECO53251 Analytical Statistics

This is an advanced statistical study of the basics of statistical analysis, the hows of statistical data processing with emphasis on analysis of variance, record figures. The course also expands on the study of correlation, regression and some statistical distributions.

ECO53252 Agricultural Economics

This course introduces the students to agricultural economics, its subjects, goals and branches. The course particularly looks at the agricultural sector, its economic characteristics, agricultural production economics, land economics, agricultural marketing and agricultural cooperatives.

ECO53253 Bank Economics

This course is devoted to the study of bank behavior as a credit institution aiming to achieve the maximum economic return. The course investigates the role of banks in increasing and collecting savings as well as in financing private and public investments.

ECO53254 Developing Countries' Economies

Topics covered in this course include characteristics of developing countries and economic problems facing them. The course covers other topics: theories related to the origins of social and economic underdevelopment and problems, economic blocs in developing countries and their endeavors for economic development and integration to establish a new world economic order. This course traces the development of the public finance concept, analyses and studies of public balance sheet as a financial conception of government economic activities. The course also examines elements of government expenditures and their importance in achieving national goals. The course ends by looking at the ways of obtaining financial resources to cover these expenditures.

ECO53312 Money and Banking Systems

In this course, students learn about origin of money, its nature, development and function. They also learn about different monetary systems and theories. Further, the students learn about origin of banks, their development and functions particularly in the field of money creation and the effect of that on economic activity, the introduction of state central banks, their functions and mechanism of implementing the monetary policy. The course ends with a look at international monetary relations and systems.

ECO53313 International Trade

This course covers several topics: international trade theories, relationship between trade terms and balance of payments, employment, price rates, international trade policies and their impact on international trade terms, current international economic system, its criticism and the need for a new international economic system to replace the current one.

ECO53314 Principles of Mathematical Economics

This course begins with an explanation of mathematical economics and its origin and the importance of using the mathematical method in analyzing economic laws. Then the course moves to identify mathematical tools employed in economics particularly in the consumer behavior theory, the business or firm, general balances and economic growth and input-output model.

ECO53315 Political Economics

This course is concerned with the study of the concept of political economics. That is, it deals with emerging production relations among people during the production process and economic activity. The course focuses on interpretation of economic laws that regulate reciprocal economy with emphasis on value surplus theory, capital theory, reproduction theory, aggregate theory and distribution theory.

ECO53351 Israeli Economy

This course is a study of how the Israeli economy has come into being and how it has developed over the years. The course examines the development of its major sectors, and infrastructure and its foreign economic links.

ECO53352 Arab World Economies

This course aims at introducing factors that have influenced the shaping of Arab countries' economies. It also traces developments of these economies with emphasis on the Arab countries' efforts to solve the problems of agricultural issues and industrialization. The course also examines the structural changes in these economies and relationships with foreign economies.

ECO53345 Multinational Corporations

This course addresses the mechanism that has led to the emergence of giant economic corporations in Europe and America and how they have expanded in most countries of the world. The course highlights the disadvantages and advantages of these multinationals on national economies and their effect on economic structures, markets and economic development. The course also discusses the ways of their "invasion" of other countries.

ECO53355 Islamic Economics

This course aims at acquainting students with the difference between economics, as a field of knowledge, and economic ideology. The course emphasizes the Islamic economic ideology and highlights the components of Islamic economic ideology based on Islamic shari'a sources. Topics covered include the economic problem, wealth, ownership system, distribution, monetary and financial systems, production, foreign trade, value concept, economic development and planning and role of the state in solving economic problems.

ECO53356 Contemporary Economic Issues

The purpose of this course is to deepen student's knowledge of pressing contemporary economic issues particularly those having global influence and those influencing Arab and local environments.

ECO53357 World Economic Systems

This course is concerned with the factors that have led to the emergence of the contemporary world economic order, its nature and its contradictions. The course focuses on the status of the different international systems within this order and the new trends in the division of international labor and the developing countries' efforts to change this order.

ECO53358 Industrial Economics

This course is a study of the market's different structures and how they influence company behavior (production, pricing, and cost) company performance (profit, growth, research and development). These will be studied in the framework of the well-known ideological schools in industrial economics. Further, the course covers competition

strategies, in both local and international markets, at the institutional and industrial sector levels. The course ends with a study of industrial development strategies coupled with an attempt to link these alternatives with the state of Palestinian industrial sector.

ECO53412 Planning and Economic Development

This course is an attempt to explain the essence of economic underdevelopment, its origin and dimensions. The course also highlights the importance of economic planning as a key method for development. Students will learn about development theories and strategies and reasons for expansion and employment of economic planning in different economic systems. Students are also introduced to types and tools of economic planning with emphasis on planning methods used in developing countries.

ECO53413 Seminar

This course aims at improving students' potential for carrying an independent research by reading intensively into relevant economic literature. Students are expected to write economics papers on important local and international economic issues. After completion of papers, students need to submit them to a faculty committee member for feedback and approval.

ECO53414 Comparative Economic Systems

This course is an analysis of the framework by which economic systems can be compared. The emphasis is on basic differences among economic systems, nature of contradictions among them and the ways of addressing these contradictions. The course will mainly emphasize the study of forms of organization, management of production and economic activity. The course ends with a look at the distribution laws in capitalist, socialist, Islamic and mixed economies.

ECO53415 Economic Feasibility Studies and Project Evaluation

In this course, students learn how to use scientific methods and tools in data collection about projects in addition to the study and analysis of these data to arrive at results that may determine feasibility of the project from technical, marketing, financial and social aspects. Students also learn about foundations of financial analysis, concept of cash flow and techniques used in evaluating investment projects and the choice of the best project taking into consideration sensitivity analysis.

ECO53450 Economic Planning

Students, in this course, get acquainted with the goals, types and stages of planning: preparation, implementation and follow-up of plans. To this end, students will be introduced to input and output models, economic growth models, measurement and mathematical models. Planning is taught at both national and sectoral levels.

ECO53451 Economic Policy

Topics covered in this course include concept and goals of economic policy and authorities in charge of its implementation. The course emphasizes the types and tools of economic policy, namely the policy of maintaining competition, income distribution policy and social justice.

ECO53452 Econometrics

This course aims at providing students with an idea about principles of ways followed in economics in order to check quantitatively the extent to which economic models and theories match the present situation. The course presents the basics of regression model, analysis of variance, hypothesis testing, general linear model, estimators and their properties, ordinary least squares, confidence intervals. Finally, the course looks at economic forecast by using the regression model.

ECO53453 Economic Growth Theories

This course is an attempt to find out the reasons behind the emergence and development of economic growth theories and their theoretical foundations. Emphasis is on the study of Marxism, Keynesianism, and Neoclassicism growth theories against the background of the outstanding economic ideological contributions of these schools.

ECO53454 Labor Economics

This course focuses on the operations of the labor market. The course analyzes labor force characteristics, and trends, types and theories of unemployment, and the public and private manpower policies. The course also examines wage structures, mechanism of wage determination and minimum wage laws. The course also briefly looks at labor supply and demand and investment in education and training, productivity and social security systems.

ECO53455 Economies of Cooperatives

This course examines the origin, development and philosophy of cooperatives as a form of production organization and economic activity. The course focuses on identification of types of economic cooperatives in the West Bank and the Gaza Strip.

ECO53456 National Income Distribution Theories

This course is a study of income distribution theory both the functional and the personal. The course also explains theories pertinent to the ways of measuring the distribution of personal income, and factors behind differences in its distribution. The course ends with an emphasis on the importance of national income distribution and its role in achieving both economic growth and social justice.

ECO53457 Palestinian Taxation System

This course begins with an introduction to the basics of taxation systems in terms of technical bases of taxes and their types: direct and indirect, individual tax, capital tax and income tax. The course discusses in detail the Palestinian taxation system since its emergence in 1994 with the advent of the Palestinian National Authority, and developments or changes rendered in the system with an emphasis on Income Tax, Value Added Tax and Property Tax.

ECO56218 Monetary and Financial Markets

In this course, students are introduced to the concept of financial market & the hypothesis of its efficiency. Students will also learn about Palestine Securities Exchange Market,

types, instruments and pillars of securities markets. Furthermore, the course highlights monetary markets and their role in the economy and the investment instruments used.

ECO56412 International Finance

This course focuses on the study of international financing institutions and the world investment structure within the framework of economy globalization and the effect of that on the performance of the national economy which depends on the scope of external funding available. Other topics raised in the course include impact of foreign funding on economic developments, rates of exchanges, relationship with macroeconomic variables particularly balance of payments. In addition, the course focuses on local economic enterprises and the means of funding: local and international banks. The course briefly examines how companies use their assets and liabilities (debts) in the short and long terms.

FACULTY MEMBERS

Full professors

Abdel-Fattah Abu Shokor Ph. D. in Developing Countries' Economies,
Philipps University, Marburg, Germany, 1980.

Associate Professors

Omar Abdel Razeq Ph. D. in Mathematical Economics and International Econ-
omy, University of Iowa, U.S.A., 1986.

Bassem Makhoul Ph.D. in Econometrics and Industrial Economics,
University of Utah, U.S.A., 1992.

Atef Alawneh Ph.D. in Economic Development,
Munich University, Germany, 1983.

Assistant Professors

Yousef Abdel Haqq Ph.D. in Economic Development,
Ein Shams University, Cairo, Egypt, 1979.

Qassem Joudeh Ph.D. in International Planning,
Poznan' School of Economics, Poland, 1979.

Mohmoud Abu Rub Ph.D. in Political Economics,
Universitat of Bruno Leuschner, Berlin, Germany, 1984.

Hassan Yasseen Ph.D. in Statistics and Econometrics,
Universitat of Gesamthochschule Paderboorn,
Germany, 1996.

Instructors

Yusr Al-Azhari M.Sc. in Statistics, Yarmouk University,
Irbid, Jordan, 1986.

UNDERGRADUATE PROGRAM IN POLITICAL SCIENCE

Admission Requirements

To join the Department of Political Science, a student must successfully complete Introduction to Political Science 54121. A minimum of 70% must be obtained in the course.

I. Requirements for a B.Sc. degree in Political Science

The Department of Political Science offers a single specialization in Political Science. Students wishing to obtain a B.Sc. degree in this specialization must successfully complete 131 credit hours which include university, college and department compulsory, elective courses as well as "free" courses.

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
53124	Palestine Economies	3	53122
54111	Research Methodology	3	None
54131	Approaches to the Study of Political Science	3	54121
54221	Introduction to International Politics	3	54121
54231	Comparative Political Systems	3	54121
54240	Western Political Thought	3	54121
54251	Political Movements and Parties in the Arab World	3	54121
54267	European Union	3	None
54312	Palestine Question in the International Arena	3	10105
54322	Foreign Policies of Great Nations	3	54121
54331	Palestinian Political System	3	54231
54332	Political Systems in the Arab World	3	54121
54333	Israeli Political System	3	54231
54413	Introduction to Zionist Ideology	3	10105
54443	Islamic Political Thought	3	54241
54469	Seminar	3	54111
112104	Principles of International Public Law	3	111101
	Total	51	

IB. Elective courses (Students choose 18 credit hours)

Course #	Course title	Credit hours	Prerequisite
33412	Modern Arab History	3	None
51253	Public Administration	3	None
53315	Political Economics	3	53122
54327	Diplomatic Protocols	3	54121
53352	Arab World Economies	3	None
54211	Development of Palestinian National Movement	3	10105
54232	International Organizations	3	112104
54265	Readings in Political Science	3	54121
54324	Arab World, Iran & Turkey in International Politics	3	54121
55352	Public Opinion	3	54121
54353	Political Sociology	3	None
54355	Contemporary International Political Issues	3	54121
45361	Arab-European Relations	3	54267
54424	Political, Economic and Military Pacts and Organizations	3	54121
54425	History of International Relations	3	54121
54444	Contemporary Political Thought	3	54241
54453	Political Development and Patterns of Change	3	54121
54454	Human Rights	3	None
54455	Oil and International Policy	3	54121
112106	Constitutional Law	3	11101

Course descriptions**POL51253 Public Administration**

This course aims at introducing students to this field of knowledge and its branches and nature of its theoretical and practical relationship with the society's political, social and economic contexts. The course studies public institutions, programs and policies. It also looks at decision-making process, analysis of policy performance, regulations as well as moral and legal bases controlling administrative tradition in the state.

POL54111 Research Methods in Political Science

The purpose of this course is to teach students library skills, documentation of library materials, collection of data, their analysis and classification. Further, the course teaches

students methods and tools of field research.

POL54131 Approaches of the Study of Political Science

This course is an analytical and critical examination of traditional and modern methodologies used in the study of political science with special emphasis on historical, behavioral, functional, and realistic methods in addition to simulation and game theories.

POL54211 Development of Palestinian National Movement

This course traces the development of Palestinian national movements in the context of their pursuit of national independence. The course begins with a historical background of the development of national movements prior to 1948. Then it moves to discuss national movements established up to 1967. The course focuses largely on Palestinian factions, which emerged after the 1967 defeat, in terms of their ideological and party framework. The course highlights the Palestine Liberation Organization as an umbrella for all these national movements.

POL54221 Introduction to International Politics

This course is a study of theoretical concepts and methods used in the study of political relations among sovereign states. It deals with local and international environments and their influence in the state's internal and foreign policy and behavior.

POL54231 Comparative Political Systems

This subject studies political systems in terms of their environment, stability and sociopolitical orientations as well as their structures and functions. It examines in great details the political models of the USA, Britain, France, Russia and China. These systems are compared with those in the Arab and Third World countries.

POL54232 International Organizations

It explores the international organizations in terms of their origin, development, types and characteristics. Then the course explains the legal status and the role in the international community. It tackles the UN, UNESCO, WHO, and AFO as well as some regional organizations such as the Arab League, Organization of African Unity and Organization of Latin American Countries.

POL54240 Western Political Thought

This course introduces students to the most important trends and tendencies in the Western political thought. It discusses the political doctrines developed by Plato, Aristotle, Augustine, Rousseau, Montesquieu, Machiavelli, Locke, Hegel and Marx. The course emphasizes a number of concepts related to politics such as justice, equality, legitimacy, sovereignty, individualism, freedom, revolution and state.

POL54251 Political Movements and Parties in the Arab World

This course is a study of ideological trends on which political movements and parties have been based. It covers Marxist, Islamic and Pan-Arabism parties.

POL54265 Readings in Political Science

It consists of selected readings in major fields of political science, political theory, political system, political life and international relations. Students are expected to do in-class and home assignments: translation, writing, and conversation.

POL54267 European Union

This class examines the origin and development of the European Union as well as its official institutions in charge of drawing up general policies and taking decisions. The course also deals with the relations of EU with non-member countries and investigates the expansion of the EU and the challenges surrounding it. It also looks into the future of the EU particularly in the economic, monetary, security, social and foreign aspects.

POL54312 Palestine Question in the International Arena

This course is a study of the development of the Palestinian question in the international arena particularly at UN, among the non-aligned countries, Muslim countries, and regional and international organizations. The course also examines the influence of the US and the former Soviet Union foreign policies on the development of the Palestinian cause. The course ends with an emphasis on the Palestinian people's influence on developments at the international level.

POL54322 Foreign Policies of Great Nations

This course is a comparative analysis of institutions' functional structures directly or indirectly concerned with foreign policy decision making in the USA, Russia, UK, France and China.

POL54324 Arab World, Iran and Turkey in International Politics

This course addresses the interaction between the Arab and Muslim Worlds, in the Arab East, and the world political system. Emphasis is on the shrinking stage and the containment of the Islamic political system and its submission to the European hegemony system up to the WWII. The course also addresses the stage of European hegemony, disintegration and its replacement by the American hegemony and the then American-Soviet competition. The course, in addition, covers foreign policies in the countries of the region and the influence of the predominant states' policies over the Arab East.

POL54327 Diplomatic Protocols

This course introduces students to modern or public diplomacy, its types, tasks and the how of practicing it in the permanent missions stationed in other countries. The course also dwells on diplomacy and diplomatic theory; diplomatic privileges and immunities; functional aspects of diplomatic and consular life.

POL54331 Palestinian Political System

This course is a study of Palestinian political system, form of government, its institutions and political environment. The course also studies the relationship between the executive and legislative authorities with special emphasis on political parties and functionaries and the decision-making process.

POL54332 Political Systems in the Arab World

This course surveys contemporary political systems of all Arab countries. It makes also a comparative analysis of political institutions, namely the legislative, executive and judiciary authorities, bureaucracies, parties and political leaderships in the Arab world. The course also looks at the Arab League and the role it plays in achieving Arab unity through its different agencies.

POL54333 Israeli Political System

This is a comprehensive survey course of the Israeli political system, its institutions and environment, and characteristics of the Israeli society. Emphasis is on political parties and functionaries and the political decision-making process. The course also shows the link between ideology and the Israeli political behavior.

POL55352 Public Opinion

This course is a study of elements shaping the public opinion and its influence on political behavior and the role it plays in the political process.

POL54353 Political Sociology

This course aims at studying the essential relationship that links sociology and political science. The course examines and studies the relationship between politics and society, and between political and social structures, between political behavior and social behavior. In this respect, it highlights and stresses the social context of political phenomenon.

POL54355 Contemporary International Political Issues

This course is a study of transformations in the world order in the wake of the former Soviet Union collapse and the effect of these changes on a number of political issues: New World Order; role of the UN in times of war and peace; regional, world and civil wars; globalism; international “terrorism”; weapons of mass destruction.

POL54361 Arab-European Relations

This course examines the collective policy stances of the EU members. It also analyzes the EU attitudes, goals and approaches concerning the Arab-Israeli conflict and the Palestinian people’s rights in particular. It also tackles the influence of the EU in the development of Arab-European ties in the light of the US and Israeli policies toward the EU’s political role in the Arab East.

POL54413 Introduction to Zionist Ideology

This course begins with an introduction to the Zionist ideology in an analytical historical context with emphasis on the Jewish and Western origins of Zionism, the major trends in Zionist ideology and the creation of the Zionist movement. The course also traces the beginning of Jewish colonization of Palestine and the relationship between Israel and the World Zionist Organization. The course ends with a brief survey of the Zionist movement and ideology at present.

POL54424 Political, Economic and Military Pacts and Organizations

The purpose of this course is to provide students with an idea about world conditions that

prevailed in the world after WWII, which led to the division of the world into two major camps, starting of the cold war and the establishment of military alliances. The circumstances after WWII also led to significant changes in the political and economic map of international relations. New economic blocs emerged. Students are also introduced to military alliances and economic organizations in terms of their objectives, and influence in international relations.

POL54425 History of International Relations

This course traces the historical development of international relations and the international political system from all aspects: political, social, economic and historical. The course also examines international political problems and their causes, and the role of international organizations in finding solutions to world problems and the effect of that on world peace and security.

POL54443 Islamic Political Thought

This course is an investigation into the basic political principles in Islam according to the Holy Qur'an and Prophetic traditions as well as according to senior Muslim scholars' independent judgments and interpretations. The course also discusses traditionalists', theologians' and al-Asha'iras' thoughts. The course will attempt to link the intellectual arguments/ debates among Islamic schools of thought with the political philosophical trends in the Muslim World.

POL54444 Contemporary Political Thought

This course examines the liberal, conservative, revolutionary philosophies. It also discusses Leninism, non-Marxist socialism, Fascism, national socialism and Moaism. There is also a discussion of political thought by raising the scientific behavioral trend in the study of political science.

POL54453 Political Development and Patterns of Change

This course is concerned with some political studies dwelling on the hows of certain political systems work and get organized. However, the course does not ignore other studies which took into consideration some aspects of governments' historical development. The course, moreover, stresses the fact that political studies change owing to political, social and economic changes.

POL54454 Human Rights

This course begins with a definition of human rights, and a brief look at the history of human rights and its development particularly after WWII. In this course, students learn about kinds of human rights and examples of these rights in international conventions and national constitutions of some countries. The course looks also at most important guarantees for the protection and respect of human rights and public freedom and the mechanism of their implementation within the same country.

POL54455 Oil and International Policy

This course first surveys the history of oil exploration, oil industry and multinational oil companies. Then the course moves to discuss the status of oil, its importance and its role

in international relations in times of war and peace. In this respect, the course covers the role of oil in economic development policies and the foreign policies of oil-producing countries (OPEC) and Arab oil-producing countries in particular.

POL54469 Seminar

Topics covered in this course include the study of the nature of political research, modern schools' methodologies in political science, methods of studying policy and government. There will be also an application of scientific research methods in political science.

FACULTY MEMBERS

Full Professors

Abdul Sattar Kassem Ph.D. in Political Science,
University of Missouri, Columbia, U.S.A., 1977.

Associate Professors

Sa'eb Erakat Ph.D. in International Policy,
University of Bradford, UK, 1982.

Assistant Professors

Farouq el-Aileh Ph.D. in Political Science,
Compelettsa University, Spain, 1984.

Nayef Abu Khalaf Ph.D. in Political Science,
University of Bradford, U.K., 1986.

Othman Othman Ph.D. in Political Science,
Universitat of Munster, Germany, 1991.

Basem Ezbidi Ph.D. in Political Science,
University of Cincinnati, U.S.A., 1994.

**UNDERGRADUATE PROGRAM
IN FINANCIAL AND BANKING SCIENCES**

Admission requirements

To major in Banking and Finance, a student must successfully complete Principles of Management I 51121; Principles of Accounting I 52121 and Principles of Finance 56121. A minimum of 70% must be obtained in each of the three courses.

I. Requirements for a B.Sc. degree in Banking and Finance

The Department of Banking and Finance offers a single major in Banking and Finance. Students wishing to obtain a degree in this major must successfully complete 131 credit hours which include university, college, and department compulsory and elective courses in addition to “free” requirements.

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
51458	Management Information Systems	3	27120
52213	Financial Business Accounting	3	52122
52122	Principles of Accounting II	3	52121
53124	Palestine Economies	3	53122
53312	Monetary And Banking Systems	3	53122
56111	Research Methodology	3	-
56212	Financial Business Management (Banks, Insurance, Stock Markets..)	3	56121
56218	Monetary and Financial Markets	3	56121
56312	Analysis and Management of Investment	3	56121
56412	International Finance	3	53312
56413	Finance Analysis	3	52122
57414	Banking Marketing	3	57121
56313	Finance Management	3	52122
56314	Readings in Finance	3	10325
56416	Management of Investment Portfolios	3	56218
56418	Management of Banking Credits	3	56121
56419	Practical Training	3	56416
111250	Commercial Law	3	111101
	Total	51	

IB. Elective courses (Students choose 18 credit hours)

Course #	Course title	Credit hours	Prerequisite
51122	Principles of Management II	3	51121
51212	Financial Mathematics	3	21103
51220	Human Resources Management	3	51122
51312	Organization Theory	3	51122
51359	Microenterprise Management	3	51122
51412	Operations Research	3	21103
51451	Insurance Theory	3	51121
51460	Islamic Banks	3	51122
52211	Company Accounting	3	51122
52231	Cost Accounting	3	51122
52312	Tax Accounting	3	52211
52352	Management Accounting	3	52231
52400	Computer Programming	3	27120
53213	Principles of Statistics II	3	53123
53313	International Trade	3	53122
53221	Business Theory and Managerial Economics	3	53121
53311	General Finance	3	53122
53315	Political Economics	3	53122
53415	Economic Feasibility and Project Evaluation	3	56313
56316	International Bank Operations	3	56218

Course descriptions**FIN56111 Research Methodology**

The aim of this course is to help students to understand methods and tools employed in research writing in administrative sciences and finance. Students will learn about basics of research in accounting studies and research: sampling, questionnaire design, means of data collection, data analysis, and hypothesis testing. By the end of the course, students should be able to write term papers and reports.

FIN56212 Finance Business Management

This course begins with an introduction to the banking systems, types of banks, and commercial banks' activities, money creation, sources of financing commercial banks, aspects of employment (direct and indirect credit facilities), commercial bank budget analysis, commercial bank internal organization, the central bank and its relationship with commercial banks, specialized credit institutions and differences between Islamic and commercial banks.

FIN56218 Monetary and Financial Markets

Students, in this course, are introduced to the concept of financial market, and competent financial market hypotheses. The course briefly looks at Palestine Securities Exchange. It also identifies pillars of stock exchange markets, types and tools of exchange markets. Further, the course examines monetary markets and their significance in the market and investment instruments. The course details on each of these instruments.

FIN56312 Analysis and Management of Investment

This course introduces the concept of investment, long term investment decisions, risks and returns with emphasis on method of calculating net of current value and its relationship with cost of capital and assessment of shares and bonds.

FIN56313 Financial Management (Shareholding Companies)

In this course, students are introduced to employment environment of financial management, and financial statements, as a basis for planning, investment and financial analysis, planning as well as analysis of liquidity and profitability. The course ends with a look at net working capital and methods of financial analysis.

FIN56314 Readings in Finance

This course covers a number of finance topics in English. Emphasis is on theoretical and modern practical applications of finance concepts pertinent to finance and investment decisions: Finance structure, merger, project evaluation, financial securities evaluations, dividends distribution and stock exchange markets...

Students will read fresh scholarly articles in journals published in English.

FIN56316 International Bank Operations

This course aims at acquainting students with bank operations and services and their role in facilitating the activation of foreign trade. The course also sheds light on foreign services offered by banks operating in Palestine with emphasis on forms of payment in foreign operations such as transfers, bills, checks and types... Further, the course emphasizes forms of internal and external operations such as open accounts, credits, and collection policies... The course ends with a look at financing foreign trade (bank operations in financing foreign trade), monetary markets and money risks.

FIN56412 International Finance

This course tackles changes and influences in balance of payments. The course also examines policies followed in correcting imbalances and their effect on the state's macroeconomic aspects. The course, in addition, investigates the causes for changes in exchange rates and the hows of their prediction and the impact of international (financial) economic relations on countries' macroeconomics.

FIN56413 Finance Analysis

This course is a study of instruments and methods used in finance analysis as a basis for objective analysis and discussion directed towards different financial statement items. The course also looks at the relationships among the different items of these statements and compares them with historical criteria and specific patterns in order to judge on the

efficiency of project management and its long and short financial positions.

FIN56416 Management of Investment Portfolios

Topics covered in this course include definition of investment portfolios, concept of optimum investment portfolio, the hows of building the optimum investment, the hows of reducing risks by diversifying and employing Beta coefficient to predict risks of investment portfolios and patterns of policies followed in portfolio management. Other topics covered include measurement of investment portfolio manager, international portfolios and future contracts.

FIN56418 Management of Banking Credits

In this course, students learn about the structure of a model banking system, rates of banking interest and their relationship with economic circumstances and variables, credit instruments, credit considerations (SCS) particularly those pertinent to guarantees, their types and banking suitability.

FACULTY MEMBERS

Associate Professors

Tariq el-Hajj

Ph.D. in Financial and Banking Sciences
University of Berlin, Germany, 1986.

Assistant Professors

Noor-Deen Abul Rub

Ph.D. in International Economics and Business,
University of Sophia, Sophia, Bulgaria, 1995.

Instructors

Islam Abdel Jawaad

M.Sc. in Financial Sciences,
Arab Academy, Amman, Jordan, 1996.

Mufeed Thaher

M.Sc. in Financial Sciences,
Arab Academy, Amman, Jordan, 1995.

Hisham Jabr

Ph.D. in Finance and Marketing,
University of Glasow. U.K. 1990

UNDERGRADUATE PROGRAM IN MARKETING

Admission requirements

To join the Department of Marketing, a student must complete successfully Principles of Marketing 57121 and Principles of Management I 51121. A minimum of 70% must be obtained in each of the two courses.

I. Requirements for a B.Sc. degree in Marketing

The Department of Marketing offers a single specialization in Marketing. Students wishing to get a B.Sc. degree in Marketing must successfully complete 131 credit hours which include university, college and department compulsory, and elective courses in addition to "free" requirements.

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
51111	Research Methodology	3	-
51122	Principles of Management II	3	51121
51210	Communication Management (in English)	3	10325
51220	Human Resources Management	3	51122
51259	Sales Management	3	57121
51412	Operations Research	3	21103
53124	Palestine Economies	3	53122
56313	Financial Management of Shareholding Companies	3	52122
57222	Marketing Management	3	57121
57223	Marketing Strategy	3	57121
57225	Commercial Promotion	3	57121
57324	Marketing Research	3	57121+51111
57329	Consumer Behavior	3	57121
57414	Banking Services Marketing	3	57121
57427	International Marketing	3	57121
57433	Marketing in English	3	10325
57449	Graduation Project	3	51111
	Total	51	

IB. Elective courses (Students may choose 18 credit hours)

Course #	Course title	Credit hours	Prerequisite
51224	Purchasing and Storage Management	3	51122
51250	Strategic Planning	3	51122
52122	Principles of Accounting II	3	52121
52231	Cost Accounting	3	52122
53415	Feasibility Studies and Project Evaluation	3	56313
57130	Personal Sales	3	57121
57131	Public Relations	3	57121
57326	Tourism Service Marketing	3	57121
57332	Managing Existing Products	3	57121
57428	New Product Development Strategy	3	57121
57434	Customer Services Management	3	57121
57435	Quantitative Methods in Marketing	3	56313
57436	Marketing Control	3	57121
57438	Marketing Non-Profit Organization Services	3	57121
57439	Health Services Marketing	3	57121
57440	Agricultural Marketing	3	57121

Course descriptions

MAR57131 Public Relations

This course aims at providing students with basic skills necessary for communication with institution's community and public. Students learn methods of studying and analyzing public opinion, its trends and formation, and its encounter. Also the course looks at necessary skills necessary for planning public relations campaigns for the benefit of institutions and their reputation.

MAR57130 Personal Sales

This course discusses selling developments related to methods of selling, and skills when dealing with customers and interacting with them.

MAR57222 Marketing Management

This course provides students with skills on how to apply administrative jobs in marketing activity, marketing planning skills, marketing organization implementation of marketing activities and finally marketing control and auditing.

MAR57223 Marketing Strategy

This course aims at deepening student's knowledge of managing marketing activities particularly linking available resources with marketing opportunities which develop as a result of developments and changes in the environment. The course also provides students with intellectual skills that enable them to analyze state of marketing activities in the light of results as a prelude to drawing a clear-cut policy for the future and introducing students to strategic alternatives in the context of economic crises.

MAR57225 Commercial Promotion

In this course, students learn about basic concepts pertinent to promotion and scientific methods. Students acquire skills that enable them to prepare and design promotion messages in a systematic, scientific and methodological way. In this course, students are also expected to produce field working papers directly after completion of each topic.

MAR57226 Tourism Service Marketing

This course provides students with practical knowledge about marketing concepts and skills acquired in Principles of Marketing. The course also provides them with the necessary knowledge to understand the nature of tourism services, the hows of their planning and appropriation with the tourists' requirements. The students will be introduced to historical, religious and health tourism as well as to management of hotel services.

MAR57325 Marketing Research

In this course, students are expected to invest their knowledge acquired in Research Methodology in the field of marketing. The course provides students with the practical knowledge pertinent to the methods of conducting marketing research, research analysis, formulation or presentation of results to serve marketing decision makers and enable them to apply research marketing skills in studying marketing problems in the Palestinian environment.

MAR57329 Consumer Behavior

The aim of this course is to introduce students to human behavior concepts important in the study of purchasing behavior. Students will be also provided with behavioral models which explain purchasing behavior. The course also looks at skills employed in the application of different behavioral concepts on the state of the Palestinian consumer.

MAR57332 Managing Existing Products

Like other courses, the aim of this course is to provide students with the necessary skills to enable them to manage existing products. This includes study, analysis of products life cycle and the relationship of each stage with the surrounding environment, planning skills and financial analysis of products oriented towards markets.

MAR57414 Banking Service Marketing

Students, in this course, learn about principles of marketing banking services, analyzing banking services, purchasing behavior and its determinants, consumer behavior, banking marketing department, marketing environment of the banking service, developing and

innovating banking services, pricing banking services, clients' patterns and ways of dealing with them...

MAR57427 International Marketing

This course introduces students to options and ways used in entering foreign markets and the hows of preference among them. The course also provides students with skills to analyze, study and evaluate risks and successes, opportunities in foreign markets and the hows of managing elements of marketing mix in the light of differences among foreign environments.

MAR57428 New Product Development Strategy

This course provides students with the necessary skills needed for development of product ideas, dealing with them, analyzing and evaluating them in order to have a successful product in the market. Students learn methods of financial, economic, and statistical analysis. Comparison among options will be done to choose the best of available ones.

MAR57433 Marketing in English

This course teaches students marketing terms in English. Students are expected to read, translate and write reports and term papers in the field of marketing. They are also expected to keep abreast of developments in marketing which requires newspaper and magazine reading.

MAR57434 Customer Services Management

Emphasis, in this course, is on reception of and processing of clients' orders by using the computer, in addition to preparation, packaging and shipment of these orders. Other topics covered include stockpiling procedures in warehouses, transportation, purchasing and information.

MAR57435 Quantitative Methods in Marketing

This course discusses how quantitative techniques are used in marketing to draw up policies and build strategies and evaluate results in the marketing field.

MAR57436 Marketing Control

This course discusses control methods and their application in marketing activities in order to upgrade the level of performance and efficiency of marketing in companies.

MAR57438 Marketing Non-Profit Organization Services

This course focuses on how to introduce and apply marketing concepts in public health, social welfare institutions, fund-raising campaigns for charitable societies and free education services.

MAR57439 Health Services Marketing

In this course, students are provided with necessary skills to apply modern marketing concept in health institutions in the private and public sectors. To this end, students will learn how to study, and analyze the nature of health services and the dimension of

investment in health institutions and the beneficiaries' objectives from their services.

MAR57440 Agricultural Marketing

Like other courses, this course aims at providing students with the necessary skills to apply marketing concepts on agricultural produce. To this end, students will be taught how to study and analyze the nature of agricultural produce, in comparison with other products, and the influence of that in marketing and management of the produce.

FACULTY MEMBERS

Assistant Professors

Majeed Othman	Ph.D. in Marketing, University of Rajasthan, India, 1994.
Mustapha Al-Hajj Ali	Ph.D. in Agricultural Sciences, Keil University, Germany, 1990.
Yousef Ghneim	Ph.D. in Business Administration and Marketing, University of An-Neelayn, Sudan, 1999.

Instructors

Abd-Allah Samara	M.Sc. in Marketing, University of Jordan, Amman, Jordan, 1986.
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COLLEGE OF ENGINEERING

I. Background and Structure

The College of Engineering, established in 1979, began with the Department of Civil Engineering. Then in 1980, the college opened the Department of Architectural Engineering. After 1990, the college added another eight undergraduate programs in engineering: Electrical Engineering, Industrial Engineering, Chemical Engineering, Computer Engineering, Mechanical Engineering and Construction Engineering. The study plans of the college's eight departments have been designed in a way that comes into full harmony with plans offered by other universities. However, the details of courses have been tailored toward meeting the needs of the local community, developing graduates' scientific and analytical experiences, and unifying the engineering methodology in Palestine.

The college is home to a number of workshops and laboratories that provide good opportunities for students to get practical training. The labs in particular serve the local community in terms of conducting necessary testing of engineering material properties, production of reports and studies based on results of testing.

To date, the college is the largest in Palestine in terms of diversity of specializations, number of students and academic cadres.

II. Academic Programs

The College of Engineering offers eight academic programs leading to B.SC. and M.SC. degrees.

1. Undergraduate programs

Civil Engineering
Architectural Engineering
Electrical Engineering
Chemical Engineering
Industrial Engineering
Computer Engineering
Mechanical Engineering
Building Engineering

2. Graduate program (four fields)

Structural Engineering
Transportation and Highway Engineering
Water and Environmental Engineering
Regional and Urban Planning

III. Undergraduate degree in Engineering

Study Plan:

The college offers eight single specializations leading to a B.Sc. in the following:

1. Civil Engineering Code # 1

2. Architectural Engineering Code # 2
3. Electrical Engineering Code # 3
4. Chemical Engineering Code # 4
5. Industrial Engineering Code # 5
6. Computer Engineering Code # 6
7. Mechanical Engineering Code # 7
8. Building Engineering Code # 8

Note: After joining the College of Engineering, a student initially signs up for general courses offered by the college. Students are expected to complete 30 credit hours by year end. The college requirements are distributed as follows:

College requirements (21 credit hours)

2. Department requirements: see relevant department

Course #	Course title	Credit hours	Prerequisite
21101	Calculus I	3	-
21102	Calculus II	3	21101
22101	General Physics I	3	-
22102	General Physics II	3	22101
22107	Physics Lab I	1	-
22108	Physics Lab II	1	22107
61102	Engineering Workshop I	1	-
61103	Engineering Workshop II	1	61102
61104	Engineering Drawing	2	-
61120	Descriptive Geometry	2	61104
Total		20	-
	* Architecture students may take Architectural Drawing I		62113

DEPARTMENT OF CIVIL ENGINEERING

I. Undergraduate degree in Civil Engineering (Dept. code #1)

The Department of Civil Engineering offers a single specialization in civil engineering. Students wishing to pursue a B.Sc. degree in civil engineering are required to complete 174 credit hours, which include university, college and departmental compulsory and elective courses, in addition to requirements from other departments.

A. Compulsory courses (106 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Practice	
61100	Introduction to Civil Engineering	1	-	1	-
61101	Introduction to Computers	1	1	1	-
61110	Statics	3	-	3	21101, 22101
61201	Computer Programming	3	-	3	61101
61202	Electrical Engineering	3	-	3	22102
61203	Engineering Geology	3	-	3	-
61204	Construction Materials	2	3	3	-
61211	Dynamics	3	-	3	61110
61212	Mechanics of Materials	3	3	4	61110, 21201
61220	Surveying I	2	3	3	21231
61221	Surveying II	2	3	3	61220
61302	Soil Mechanics	3	3	4	61212, 61203
61303	Foundation Engineering	3	-	3	61302, 61390
61315	Structural Analysis I	2	3	3	21203, 61212
61316	Structural Analysis II	2	3	3	21321, 61315
61401	Structural Analysis III	2	3	3	61316
61340	Fluid Mechanics	3	3	4	61211
61345	Hydraulics	3	-	3	61340
61390	Design of Reinforced Concrete I	2	3	3	61315
	Civil Engineering Internship	3	-	3	Dep. Approval
61420	Steel Structures	2	3	3	61316
61441	Hydrology	3	-	3	61345
61371	Building Construction	2	3	3	61104, 61204
61350	Environmental Engineering I	2	-	2	23101

61351	Environmental Engineering II	3	-	3	61350, 61345
61450	Environmental Engineering III	3	-	3	61351
61360	Transportation Systems Eng. I	3	-	3	61221
61460	Transportation Systems Engineering II	2	3	3	61360
61461	Transportation Systems Engineering III	1	3	2	61460
61470	Specifications and Quantities Estimating	3	-	3	61371
61471	Engineering Economics	2	-	2	Third year level
61472	Engineering Management	3	-	3	61471, 61371
61520	Irrigation and Drainage	2	-	2	61441
61490	Design of Reinforced Concrete Structures II	2	3	3	61390
61491	Design of Reinforced Concrete Structures III	2	3	3	61490
61597	Project I	3	-	3	Fifth year level
61599	Project II	3	-	3	Fifth year level

B. Courses from other departments (16 credits)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Practice	
21201	Calculus III	3	-	3	21102
21203	Differential Equations	3	-	3	21201
23101	Chemistry I	3	-	3	-
23107	Chemistry Lab	-	3	1	-
21231	Methods of Statistics	3	-	3	-
21321	Numerical Analysis	3	-	3	61201

C. Department electives (9 credits)

The department offers a number of courses in civil engineering to allow students to make up for what they might not have taken in the department compulsory courses. All electives are offered in the form of core courses and after department approval. The department has a committee charged with the offering of these courses. The elective course might be given to a student as an independent study if he/she is researching a subject directly related to the course. In such a situation, the number of students in the

elective course must not be less than that approved by the department at the time.

Course Descriptions

CE 61100 Introduction to Engineering

This course discusses briefly the history of engineering, its development and its relationship to other sciences. The course, then, moves to engineering design, its types, areas, and requirements. It also examines the important relationships between engineering and other planning and administrative sciences, as well as engineering ethics and controls for professional practice.

CE 61101 Introduction to Computers

This course covers an introduction and historical review to computers, their development, and components. It also acquaints the students with the operating systems, mainly DOS and WINDOWS, and introduces them to the widely used and famous softwares such as Word, Excell, Autocad, etc., as well as the Internet and programming languages, such as visual basic, C++, etc.

CE 61104 Engineering Drawing

This course covers several topics: basic drawing techniques and materials used, orthographic projection, technical sketching, geometric constructions and drawing isometric and oblique pictorial views of objects.

CE 61110 Statics

This course introduces the students to the fundamental concepts of vectors, equilibrium of force system for particles and rigid bodies. It also looks at the application of principles of statics to structures, axial force, shear and bending moments, friction, centroid, and moment of inertia.

CE 61120 Descriptive Geometry

This course covers the graphic representation of points, lines and planes, and the relations of parallelism and perpendicularity, methods of body intersection, development, revolving and engineering applications.

CE 61201 Computer Programming

The student will learn the basic techniques and tools for programming in a high-level computer programming language, such as FORTRAN, PASCAL, C++, etc.

CE 61202 Electrical Engineering

This course covers the following topics: fundamentals of electrical engineering, linear circuit theory, analysis of A/C solid-state circuits, electrical machines and devices, amplifiers, transformers, lighting and electrical installation, electronic circuits, transistors, semiconductors, and legal standards.

CE 61203 Engineering Geology

This course studies various types of geological sciences and their relationship to other

sciences. Topics covered include: cosmology, crystallography, mineralogy, petrology and soil and rock engineering behavior. At the end, it provides an introduction to soil mechanics.

CE 61204 Construction Materials

A study of properties and behavior of building materials used in civil engineering, such as cement, concrete, metals, and wood. Students will also learn the standard specifications and testing methods associated with the production and quality control methods, and workplace safety procedures.

CE 61211 Dynamics

A study of energy and the influence of forces on particles and rigid bodies. The course also examines kinematics, kinetics, and momentum, as well as their impulse principles and applications on rigid bodies. It also introduces the science of vibrations and computer applications.

CE 61212 Mechanics of Materials

Topics covered in this course are fundamental principles and theories of stress and strain, and their interrelationship, mechanical properties of materials, pressure, influence of temperature, shear and bending forces and stresses, flexural and compound stresses, maximum and minimum strains, Mohr's circle, deflection of beams, stability of columns, statically indeterminate members and computer application.

CE 61220 Surveying I

This course introduces the basic principles of plane surveying and map making. It includes the subjects of theory of errors, measurement of distances, angles and elevations using both simple and advanced equipment. It also deals with the computation of coordinates and traverses.

CE 61221 Surveying II

This course builds on the subjects taught in Surveying I and introduces other subjects, which include the computation of areas and volumes, route surveying, horizontal control surveys, adjustment computation and photogrammetric engineering.

CE 61302 Soil Mechanics

Students will learn the fundamental principles of soil behavior including physical and mechanical properties, as well as the classification, identification, and soil-testing. Students will also be introduced to the principles of permeability and seepage as well as the theory and applications of consolidation. The course ends with a look at shear strength applications on soil and soil bearing for building foundations and other purposes.

CE 61303 Foundation Engineering

This course begins with review of soil mechanics and introduction to subsurface exploration. Then it covers bearing capacity of shallow foundation, stress distribution and foundation settlement. Then it moves to lateral earth pressure and retaining structures. This course ends with an introduction to the pile foundation system. It includes computer

applications.

CE 61315 Structural Analysis I

This course is an analysis of statically determinate beams, trusses, compound and simple, cables and arches and rigid frames. It also includes a study of deflection computation using different methods, and influence lines for determinate elements.

CE 61316 Structural Analysis II

This course focuses on the analysis of statically indeterminate structures and frames using various methods, energy theorems and influence lines for indeterminate elements. Matrix methods and structural dynamics are also introduced.

CE 61340 Fluid Mechanics

This course is a study of the physical and engineering properties of fluids, statics and dynamics, and the effects of kinetic and kinematics materials (dynamics) and statics on fluids. The course also considers equations of continuity and linear momentum and their applications on fluid as well as flow of ideal and real fluids, differences between them, ways of fluid measurement, and applications to engineering problems. The course includes lab work involving measurement of fluids.

CE 61345 Hydraulic Engineering

This course is a study of the principles of fluid mechanics as applied to the control and utilization of water. The course includes dimensional analysis and similitude, closed conduits and open-channel design, hydraulic power and machinery. The course also studies water movement in pipes, design of water networks, pumps and turbines.

CE 61350 Environmental Engineering I

Subjects taught in this course include: an overview of environmental engineering, global environmental status and degradation, occurrence of natural water resources, water quality classification and analysis, introduction to environmental standards and specifications and description of environmental sampling techniques and analysis.

CE 61351 Environmental Engineering II

Students learn to estimate water demand and wastewater quantities along with design factors. Water conveyance and transport systems, wastewater collection and disposal networks, water distribution systems, storage facilities, pumping stations are introduced with design estimates and analysis.

CE 61360 Transportation Systems Engineering I

Basic principles of analysis of transportation systems, principles of geometric design of highway network, study of elements involved in the operation of major transport systems such as highways, railroads, airports, seaports, and introduction to public transportation.

CE 61371 Building Construction

The subjects taught in this course include: the types of construction, preparation of the site, safety in the construction site, the elements of a building and their types such as

foundation, columns, beams, roof, etc., the materials used in the construction process such as concrete, blocks, steel, stones, etc., the finishing elements such as plastering, painting, tiling, electrical and mechanical work, elevators, etc. Overall, this course aims to develop student's abilities to construct a building from beginning to end.

CE 61390 Design of Reinforced Concrete I

Students are introduced to the behavior of reinforced concrete structural elements, theories and design, concepts of design and analysis and proportioning sections for strength and serviceability. The course also discusses the design of elements; beams, slabs, columns and footings as well as computer application in various aspects.

CE 61391 Civil Engineering Internship

Each student is expected to spend nine weeks of training and work in a recognized engineering or construction firm, and is required to prepare a detailed report summarizing his/her practical work experience: both office and fieldwork.

CE 61401 Structural Analysis III

Topics covered in this course include theory of elasticity, finite element principles, and applications in analysis of beams, trusses, rigid frames, dynamics as well as computer applications.

CE 61420 Design of Steel Structures

This course provides students with a background about specifications, requirements, and behavioral principles and design of structural steel tension, compression, and flexural members. The course also introduces the types of connections: riveted, bolted, and welded. The course finally provides structural detailing for trusses, beams, and columns and frame elastic designs. It also includes some computer applications.

CE 61441 Hydrology

This course is a study of various elements of the water cycle in nature. The course surveys sources of supply and movement of underground and surface waters in addition to component processes of the hydrologic cycle. The course is also a study of run-off prediction stream flow, reservoir and flood footing. The course ends with an examination of engineering techniques used in statistical analysis of hydrologic data.

CE 61450 Environmental Engineering III

Students are introduced to water and wastewater treatment along with choices of treatment processes according to quality standards and socio-economic conditions and site specifications. Physical, chemical, biological, and advanced treatment processes with design estimates are given. Monitoring, follow-up, operation and maintenance management along with sludge management are also detailed.

CE 61460 Transportation Systems Engineering II

Study of the fundamentals of traffic engineering and planning and the associated laboratories. This includes traffic engineering studies, fundamentals of traffic flow, capacities and level of service for highway facilities, highway operation systems, traffic

control devices, traffic signal design, principles of planning for transportation systems and basic steps of travel demand forecasting.

CE 61461 Transportation Systems Engineering III

Analysis and design of pavement systems and the associated laboratories. This includes analysis of pavement systems, properties of pavement layers materials, methods of laboratory/field testing, vehicle loads on pavements, basic of flexible and rigid pavements design methods, introduction to pavement performance and distresses and basics of pavement management systems.

CE 61470 Specifications and Quantities Estimating

This course introduces the basic principles of calculating costs of civil engineering projects, ways of estimating contractor's and subcontractor's costs, owner's and design engineer's costs. The course also looks at types and ways of estimating costs, types of contracts and their conditions, construction project costs, quantity takeoffs, pricing various components of the project, technical specifications, their types, and their writing, in addition to distribution of risks, and losses during execution.

CE 61471 Engineering Economics

Topics covered include principles and ways used by the engineer to justify the economic decisions concerning long and short-term planning, development of skills in preparing cash-flow as well as present and future value calculations. The students are introduced to different ways used in evaluating projects and their economic feasibility using present value, future value, annual payments, rate of return profit to choose most feasible project.

CE 61472 Engineering Management

Topics covered in this course include basic principles of project management, project analysis and planning, programming, organizing, and controlling during construction stage. The course also covers the different ways for project programming such as critical path method. In addition, it looks at ways of distributing and controlling costs, safety and quality control during implementation and computer applications.

CE 61490 Design of Reinforced Concrete Structures II

The course teaches the students how to design continuous concrete flexural members and members subject to combined axial load and bending. Students also learn about flooring systems, design of framed and multi-story buildings. The course ends with a look at special structure designs and pre-stressed concrete as well as computer applications.

CE 61491 Design of Reinforced Concrete Structures III

Topics covered in this course include footing design (spread, combined, mat, and piles), retaining structures and shell roofs. There will be also computer applications on several reinforced concrete problems.

CE 61520 Irrigation and Drainage

This course examines the problems encountered in the irrigation and drainage of agricultural land. It introduces the students to the irrigation system components, their

selection and efficient use. The students will also learn about surface and subsurface drainage systems and machinery and piping systems.

Elective courses from the Civil Engineering Department

CE 615100	Computer Applications in Civil Engineering
CE 61501	Advanced Foundation Engineering
CE 61511	Conceptual Design
CE 61541	Ground Water
CE 61561	Transportation System Management
CE 61562	Pavement Design
CE 61574	Elective Course (Water and Environmental)
CE 61572	Elective Course - Structures I
CE 61573	Elective Course - Structures II
CE 61575	Elective Course - Soil Mechanics
CE 61576	Elective Course - Transportation
CE 61577	Elective Course - Construction Management
CE 61579	Elective Course - Structures III
CE 61614	Advanced Reinforced Concrete
CE 61619	Advanced Topics in Surveying
CE 61620	Geographic Information Systems
CE 61630	Advanced Topics in Soil Mechanics
CE 61667	Advanced Highway Design
CE 61670	Advanced Topics in Civil Engineering Materials
CE 61676	Water Resources Management
CE 61680	Special Topics in Civil Engineering I
CE 61715	Structural Failure Analysis
CE 61799	Special Topics in Civil Engineering II

CE 61597 Project I

CE 61599 Project II

In these courses, the students will receive instruction on specific topics in civil engineering. The topics will be introduced in a detailed and analytical manner. In each of these courses, the student may also conduct a field study on a topic related to civil engineering. Each student should take three courses (9 credit hours) from the following list:

In these two courses, which are covered in two consecutive semesters, each student is expected to select a civil engineering problem in consultation with his/her supervisor and the approval of the department head. The work produced should reflect the high standard of academic strength, expressive ability and professional orientation at the final stage of the student's preparation.

FACULTY MEMBERS

Full Professors

Marwan N. Haddad Ph.D. in Environmental Engineering,
Syracuse University, U.S.A., 1986.

Associate Professors

Sameer Abu Eishah Ph.D. in Transportation Engineering,
Pennsylvania State University, U.S.A., 1987.

Nabil M. Dmaid Ph.D. in Construction Management,
Dundee University, Scotland, U.K., 1995.

Anan F. Jayyousi Ph.D. in Water Engineering,
Utah State University, Utah, U.S.A., 1995.

Osama A. Abaza Ph.D. in Transportation Engineering,
Brigham Young University, Utah, U.S.A., 1994.

Assistant Professors

Amin H. El-Holou Ph.D. in Structural Engineering,
University of North Carolina, U.S.A., 1981.

Riyad Abdel-Karim Ph.D. in Structural Engineering,
Pennsylvania State University, U.S.A., 1989.

Abdel-Razzaq Touqan Ph.D. in Structural Engineering,
Stanford University, U.S.A., 1989.

Hafez Shaheen Ph.D. in Water Engineering,
Braunschweig University, Germany, 1991.

Mohammed A. Ghazal Ph.D. in Geotechnical Engineering,
Pennsylvania State University, U.S.A., 1992.

Najeh S. Tamim Ph.D. in Surveying and GIS,
Ohio State University, U.S.A., 1992.

Wa'el H. Abu Assab Ph.D. in Structural Engineering,
Kassel University, Germany, 1993.

Isam G. Jardaneh Ph.D. in Geotechnical Engineering,
Utah State University, Utah, U.S.A., 1994.

Hisham Shkoukani Ph.D. in Structural Engineering,
Wayne State University,
Detroit, Michigan, U.S.A., 1993.

Shaker S. Bitar Ph.D. in Structural Engineering,
Manchester University, U.K., 1996.

Khalid e-Sahileh Ph.D. in Transportation Engineering,
Michigan State University, Michigan, U.S.A., 1995.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

Requirements for a B. Sc. in Architectural Engineering (course code #2)

The Department of Architectural Engineering offers a single specialization in architectural engineering. All students wishing to obtain a B.Sc. must complete 180 credits, which include university, college and department compulsory and elective courses and “free” requirements.

Compulsory courses (120 credits)

Course #	Course title	Credit hours	Prerequisite
62150	Introduction to Architecture	1	-
62115	Principles of Design I	2	Admission to
62116	Principles of Design II	2	Architecture major
62113	Architectural Drawing I	2	-
62114	Architectural Drawing II	2	62113
62120	Descriptive Geometry	-	-
62121	Free Hand Drawing I	1	-
62122	Free Hand Drawing II	1	62121
62222	Architectural Presentation	1	62122
62225	Architectural Design I	4	62114, 62116
62226	Architectural Design II	4	62225
62200	Visual Training I	2	-
62201	Visual Training II	2	62200
61203	Geo Engineering	3	-
62216	History of Architecture I	3	-
62217	History of Architecture II	3	62216
62220	Principles of Structures I	3	-
62221	Principles of Structures II	3	62220
62230	Materials and Architectural Construction I	2	-
62231	Materials and Architectural Construction II	2	62230
62250	Introduction to Computer Programming	3	-
62310	Surveying for Architects	2	-
62312	Theory of Architecture I	2	-
62313	Theory of Architecture II	2	62312
62322	Architectural Structures I	3	62221
62323	Architectural Structures II	3	62322
62330	Building Systems in Architecture I	3	62231

62331	Building Systems in Architecture II	3	62330
62333	Architecture in the Muslim World I	3	62217
62351	Environmental Systems in Architecture I- Thermal	2	-
62352	Environmental Systems in Architecture II- Sanitation	2	62351
62311	Palestinian Architecture I	2	62217
62335	Architectural Design III	4	62226
62336	Architectural Design IV	4	62335
62400	Internship	3	Department approval
62445	Architectural Design V	4	62336
62446	Architectural Design VI	4	62445
62410	Urban Design	2	-
62453	Environmental Systems in Architecture III: Electrical Installation	2	62352
62454	Environmental Systems in Architecture IV: Acoustics	2	62453
62480	Computer-Aided Design I (CAD)	3	62250
62460	Construction Economics	3	-
62470	Introduction to Planning	3	-
62500	Research Program	3	62446
62555	Architectural Design VII	4	62446
62556	Graduation Project	4	62500, 62555
62560	Architectural Professional Practices I	2	62446
62561	Architectural Professional Practices II	2	62560
Total		120	

Department Electives (11 credits)

Course #	Course title	Credit hours	Prerequisite
62510	Interior Architecture	2	-
62520	Architectural Preservation	2	-
62530	Human Behavior in Architecture	2	-
62540	Photography	2	-
62550	Architectural Visual Analysis	2	-
62551	Special Problems I	1	-
62552	Special Problems II	2	-
62553	Special Problems III	3	-
62511	Palestinian Architecture II	2	62311

62533	Architecture in the Muslim World II	2	62333
62590	Computer Aided Design II	2	62480
62570	Urban and Regional Planning	2	62470
62566	Landscape Architecture	2	-
62577	Site Planning	2	-
62522	Housing	2	-
62544	Design and Solar Energy	2	-

Course Descriptions

ARC62113 Architectural Drawing I

This course aims at developing student's fundamental skills in architectural drawing through the use of a variety of graphic materials, methods and techniques.

ARC62114 Architectural Drawing II

This course aims at developing student's skills in architectural drawing and presentation, methods of constructing one and two point perspectives, shades and shadows projection on two-dimensional drawings.

ARC62115 Principles of Design I

A study in basic principles of the design process through an introduction to general ideas and concepts of design theories.

ARC62116 Principles of Design II

This course focuses on the development and application of basic concepts of design in several small and simple building projects.

CIV61120 Descriptive Geometry

This course covers the fundamentals of descriptive geometry, three-dimensional study of objects, their projections and intersections in space.

ARC62121, ARC62122 Free Hand Drawing I & II

These courses aim at the building of sketching skills as one form of expression and thinking in the design process.

ARC62150 Introduction to Architecture

This course begins with an introduction to architecture as a profession, its concerns, challenges and potentials, and relationship with other environmental design and engineering fields including construction, urban planning, landscaping and interior design.

ARC62200, ARC62201 Visual Training I & II

These courses aim at developing aesthetic expression and judgment in design and architecture through the creative use of art elements and design principles.

ARC61203 Geo-Engineering

This is a general introduction to geology; types of soil and rocks, and their relationship with building construction.

ARC62216, ARC62217 History of Architecture I & II

This course is a study of the development of world architecture from classical to present times.

ARC62220, ARC62221 Principles of Structures I & II

This course is a study of basic structural principles of static and strengths of materials adapted to the needs of architects.

ARC62222 Architectural Presentation

This course introduces students to different methods and techniques of presenting architectural drawings, such as pencil techniques, ink and color rendering

ARC62225, ARC62226, ARC62335, ARC62336 Architectural Design I, II, III, and IV

In these courses, sophomore and junior students are introduced to several design projects of average scale and complexity. The main objective is to expose students to a wide range of building types, and to acquaint students with design requirements and solutions suitable for each building type: educational, health, commercial, cultural and touristic.

ARC62230, ARC62231 Materials and Architectural Construction I & II

These courses are an advanced study of the building construction systems of individual and composite materials, the evaluation and selection of systems with regard to construction process, technological, economic, regularity and expressive constraints, and the production of a complete set of working drawings and written descriptions.

ARC62250 Introduction to Computer Programming

This course is a general introduction to computer science, programs, languages used, and ways of using the computer and its applications in architecture.

ARC62310 Surveying for Architects

This course is an introduction to principles and fundamentals of surveying and its application in architecture.

ARC62311 Palestinian Architecture I

This course is a study of traditional Palestinian architecture, traditional architectural elements, building materials and techniques.

ARC62312 and ARC62313 Theory of Architecture I & II

These courses are a study of the major philosophies and trends that have determined different directions and movements in the field of architecture.

ARC62322, ARC62323 Architectural Structures I & II

These courses constitute an introduction to the methods of analysis and design of

structures, structural analysis and design in reinforced concrete, steel and timber.

ARC62330, ARC62331 Building Systems in Architecture I & II

These courses are an advanced study of the building construction systems of individual and composite materials, evaluation and selection of systems with regard to construction process, technological, economic, regularity and expressive constraints. Production of a complete set of working drawings and written descriptions.

ARC62333 Architecture in the Muslim World I

This course is an analytical study of the history of Islamic architecture; evolution and development of architectural form under the influence of Islamic culture.

ARC62351, ARC62352, ARC62453, ARC62454

Environmental Systems in Architecture I, II, III, and IV

These courses are an examination of the impact of environmental technology on building design concepts. They also offer an introduction to theoretical and scientific basis of air conditioning, sanitation, lighting, and acoustics.

ARC62400 Internship

This is comprised of twelve weeks of work with a recognized architectural firm (in compliance with the Department of Architecture internship guidelines), office work and field experience.

ARC62410 Urban Design

This course is an analysis of urban form as a product of social, economic and political forces and the aesthetic theories. Students are introduced to contemporary international experience in urban design and adaptability of the developed criteria and methods to local needs.

ARC62445 Architectural Design V

This course focuses on the traditional architecture and the traditional urban environments of old towns of Palestine. Students are exposed to architectural surveys, documentation of old buildings, conservation, adaptation of old buildings to contemporary uses and fitting new buildings in old contexts.

ARC62446 Architectural Design VI

This course aims at developing students' understanding of housing design and housing schemes suitable to local Palestinian culture, economy, and building regulations. Students will be exposed to different approaches in solving problems related to housing design.

ARC62460 Construction Economics

This course is a study of costing techniques and financing procedures, and includes an examination of the principles and methods of specifications and construction estimation.

ARC62470 Introduction to Planning

This course is an introduction to the fundamentals of city planning, its importance and relationship to the built environment. It is also a study of the main characteristics and components of the city; the evolution and development of cities, a concise study of planning processes, design of cities and the preparation of land use plans.

ARC62480 Computer-Aided Design I

This course is an introduction to different computer programs available to facilitate the production of architectural drawings.

ARC62500 Research Program

The main objective of this course is to introduce students to research methods, techniques and tools. Theoretical study and application of sampling, questionnaires, interviews, observations and experimentation are also introduced. The course guides students to prepare their final project theses.

ARC62510 Interior Architecture

This course covers history and theory of the design of architectural interiors and its related components. It also considers design determinants including behavioral, activity, environmental and technological factors. This course ends with design analysis and synthesis.

ARC62511 Palestinian Architecture II

This is a study of the development of local architecture during the twentieth century.

ARC62520 Architectural Preservation

This course is an examination of the contemporary theories, techniques and practice of the urban and architectural historic preservation and their applicability to regional and local preservation problems. The course also includes a discussion of historical, legal, political, financial and programmatic aspects.

ARC62522 Housing

This course introduces students to the fundamentals of housing design and to problem solving such as planning housing projects and residential areas. The course introduces students to the basic principles of planning local and international housing projects.

ARC62530 Human Behavior in Architecture

This course examines the mutual influence between human behavior and the built form. It is also a study of the social and psychological concepts by which the behavior/environment relationship can be understood.

ARC62533 Architecture in the Muslim World II

This course is a study of the development of contemporary architecture and architects in the Islamic and Arab worlds through analysis of important examples.

ARC62540 Photography

Students in this course are introduced to techniques of photographic image generation,

development of darkroom skills, photography as a communicative aid in architectural design.

ARC62544 Design and Solar Energy

This course covers solar energy thermal processes, systems and components, passive and active solar systems and their design implications in architecture, and solar system economics.

ARC62550 Architectural Visual Analysis

This course is an examination of urban form and space with regard to visual principles and aesthetic values. It is also a survey and analysis of urban areas. Theory of visual perception and its application to urban form problems are also introduced.

ARC62551, ARC62552, ARC62553 Special Problems I, II, III

These courses are a study of specific architectural problems under the direction of a faculty member in the department. This course may be repeated for a maximum of four credits.

ARC62555 Architectural Design VII

This course focuses on development of design strategies on an urban scale and looks beyond the design of individual buildings. It also focuses on problems related to urban design, public spaces, and the integration of one project with the rest of the city.

ARC62556 Graduation Project (general supervision)

This is individually selected by students and approved by the department. The final design project is designed by the student in his/ her final year with general supervision by course instructors.

ARC62560, ARC62561 Architectural Professional Practices I & II

This course is an examination of the professional architectural practice and the problems related to job control both in the office and the field. Students also learn about construction contracts, bidding supervision, building law, architect's relationship with the owner, and professionals in the building industry.

ARC62566 Landscape Architecture

This course is a review of history and theories of landscape architecture. It is also an introduction to design of the outdoor environment covering residential and small scale landscape developments. It ends with a look at project program, site selection and analysis, concept generation and design schemes.

ARC62570 Urban and Regional Planning

This course is a comprehensive theoretical and practical study of the fundamentals of urban and regional planning. It also traces the historical development and phases of planning process, content and characteristics and methods of preparing planning documents and plans, such as the comprehensive plan, land use plan. Also it introduces some of the planning procedures such as land subdivision, and the reserved real-estate.

ARC62577 Site Planning

This course is a comprehensive study of the concept and context of site planning. It provides students with the basic principles and phases of the site planning process, including the analysis of physical characteristics of sites, selection and distribution of activities, transportation systems and design elements applicable to the site.

ARC62590 Computer-Aided Design II

This course focuses on different 3D architectural programs.

FACULTY MEMBERS

Assistant Professors

Jihad Awad	Ph. D. in Urban Design and Architectural Preservation, University of Stuttgart, Germany, 1996.
Ali Abdel-Hamid	Ph. D. in Urban and Regional Planning, Middle East Technical University, Ankara, Turkey, 1996.
Khalid Qumhiyah	Ph. D. in Renovation, University of Glasgow, UK, 1992.
Khairah Mar'I	Ph. D. in Urban Design, University of Hanover, Germany, 1992.
Ziyad Sinan	Ph. D. in Architecture, University of Newcastle, UK, 1993.
Mohammed Attallah Yaseen	Ph. D. in Renovation, University of York, UK, 1995.
Khalid Hijazi	Ph. D. in Graphics and Photography, University of Berlin, Germany, 1989.
Iman el-Amad	Ph. D. in Housing and Renovation, University of Glasgow, UK, 1998.
Iman el-Assi	Ph. D. in Renovation, Herriot-Watt University, Edinburgh, UK, 1998.
Imad Assali	Ph.D. in History and Theory of Architecture, Technical University of Graz, Austria, 2001.

Research and Teaching Assistants

Fida' Yassen	B. Sc. in Architectural Engineering, An-Najah National University, Nablus, Palestine, 1993.
Ass'ad al-Arandi	B. Sc. in Architectural Engineering, An-Najah National University, Nablus, Palestine, 1995.
Haitham Al-Ratrout	Ph.D. in Architecture and Building Science, University of Strathclyde, Glasgow, Scotland, U.K. 2002. On Academic Leave
Hasan Al-Qadi	Urban Planning in Architecture Technical University of Graz, Austria, 2001.

Mohammed Atmeh B.Sc. in Architectural Engineering,
An-Najah National University, Nablus, Palestine, 2000.

DEPARTMENT OF ELECTRICAL ENGINEERING**I. Compulsory courses (114 credit hours)**

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21102
21203	Differential Equations	3	21201
21231	Statistics Methods	3	-
21241	Linear Algebra	3	-
21302	Partial Differential Equations	3	-
21321	Numerical Analysis	3	21241, 61201
23101	General Chemistry I	3	-
23107	General Chemistry Lab I	1	-
61110	Statics	3	21101
61201	Computer Programming	3	-
61211	Dynamics	3	61110
63211	Electrical Circuits I	3	22102
63212	Electrical Circuits II	3	63211
63218	Electrical Circuits Lab	1	63211
63234	Advanced Programming and Data Structures	3	61201
63251	Electromagnetic Theory	3	63211
63260	Electronic Circuits I	3	63211
63304	Internship	3	Completion of 4th year
63321	Systems and Signal Analysis	3	63212
63322	Communications	3	63321
63328	Communications Lab	1	63322
63331	Digital Electronic Circuits I		63363
63338	Digital Electronic Circuits Lab I	1	63363
63340	Electrical Instruments and Measurements	3	63212
63352	Electromagnetic Waves and Fields	3	63251
63363	Electronic Circuits II	3	63260
63365	Electrical Circuits II	3	63260
63371	Electrical Machines I	3	63212
63378	Electrical Machines Lab I	1	63212
63430	Digital Electronic Circuits II	3	63331
63433	Microprocessors	3	63430

63442	Control Systems	3	63321
63448	Control Systems Lab.	1	63321
63464	Solid State Electronics Lab	3	63363
63465	Power Electronics	3	63363
63466	Electronic Circuits III	3	63363
63472	Electrical Machines II	3	63371
63479	Electrical Machines Lab II	1	63371
63481	Energy and Power Systems I	3	63472
63482	Energy and Power Systems II	3	63481
63484	Electrical Installations & Safety Systems	3	63371
63539	Microprocessors Lab	1	63430
63501	Special Problems	3	-
63589	Introduction to Graduation Project	1	-
63590	Graduation Project	3	-

II. Elective Courses:

IIA. Electronics and Communications Engineering courses

Course #	Course title	Credit hrs
63523	Digital Communications	3
63524	Communications Systems	3
63525	Electronics of Communications	3
63526	Microwaves	3
63566	Electronic Industries	3
63567	Advanced Electronics	3

Requirements for a B.Sc. in Electrical Engineering (Dept. code #3)

The Department of Electrical Engineering offers a single specialization in electrical engineering. Students wishing to obtain an undergraduate degree in this major must successfully complete 175 credit hours which include university, college, and department compulsory and elective courses as well as six "free" credit hours.

IIB. Power Engineering courses

Course #	Course title	Credit hrs
63574	Control of Electrical Machines	3
63580	High-Tension Transmission Lines	3
63585	Power Systems Analysis & Planning	3
63586	Alternative Energy Systems	3
63587	Energy Conversion	3
63588	CAD Applications in Power Systems	3

IIC. Computer Engineering courses:

Course #	Course title	Credit hrs
63530	Computer Organization & Design	3
63531	Operating Systems	3
63537	Computer Networks	3
63538	Advanced Computer Design	3
63540	Advanced Microprocessors	3
63541	PLC Design and Applications	3

Course descriptions**ELE63211 Electrical Circuits I**

Topics covered in this course are circuits variables and elements, simple resistive circuits, techniques of circuit analysis, induction and capacitors, natural and step response of RL, RC, RLC circuits.

ELE63212 Electrical Circuits II

This course covers sinusoidal steady state analysis, balanced three phase circuit, mutual inductance, series and parallel resonance, Laplace transform in circuits analysis.

ELE63260 Electronic Circuits I

Topics covered include basic principles of electronic device, P-N junction diode and applications, Zener diode, and two terminal devices, bipolar and FET transistor biasing, small signal models for diodes and transistors.

ELE63363 Electronic Circuits II

This course focuses on types of BJTR amplifier analysis: (CC, CB and CE) FET amplifiers and operational amplifiers.

ELE63466 Electronic Circuits III

This course highlights power amplifiers and DC-power supplies, wave generators, oscillators, multivibrators, comparators, square-wave, sinusoidal wave times.

ELE63464 Solid State Electronics

This course describes electrical properties and designs of various semiconductor devices such as P-N junction diodes, negative resistant diodes, tunnel diodes, FET and bipolar transistors.

ELE63340 Electrical Instruments and Measurements

This course covers measurement and error, system of units and standards of measurements course, electromechanical indicating instruments, bridge measurements, meggers, watt hourmeters, oscilloscopes, sensors and transducers, data acquisitions system. The course also looks at design and applications of various measuring devices: AVO-meters, watt meters, oscilloscopes, and chart recorders.

ELE63331 Digital Electronic Circuits I

In this course, students receive instruction on Boolean algebra, logic gates, combinational network design, flip-flops, sequential networks, and synchronous and asynchronous systems.

ELE63251 Electromagnetic Theory

Topics covered in this course include static electric field dielectrics, polarization, field distributions of charges. The course also covers steady electric currents, field at boundary conditions, Ferro magnetic materials, and Maxwell equations.

ELE63352 Electromagnetic Waves and Fields

Topics covered include planewaves, wave polarization, wave reflection, refraction and diffraction, transmission and resonators.

ELE63442 Control Systems

This course covers several topics: Laplace transforms, system representation, frequency response, bode plots, polar plots, Root Locus compensation, cascade and feedback compensation, frequency-response plots. In addition, the course introduces state-space variable feedback modern control, development of the solution time criterion, use of quadratic performance index. The course ends with computer applications in control systems.

ELE63481 Energy and Power Systems I

Topics introduced in this course include basic concepts, series impedance of transmission lines, capacitance of transmission lines, current and voltage relations on transmission lines, system modeling. The course also discusses network calculations, load flow solutions and control.

ELE63482 Energy and Power Systems II

This course covers economic operation of power systems, symmetrical three-phase faults, symmetrical components, unsymmetrical faults, system protection, power system

stability.

ELE63371 Electrical Machines I

This is an introductory course to machinery principles, transformers; single-phase and three-phase. It also introduces DC machinery fundamentals, DC motors and DC generators.

ELE63472 Electrical Machines II

This advanced course covers AC machine fundamentals, synchronous generators, synchronous motors, induction motors, single phase and special-purpose motors.

ELE63322 Communications

This course discusses modulation and transmission of information, noise sources and their effects in communications systems, filters and demodulation devices.

ELE63321 Systems and Signal Analysis

Topics covered in this course include Laplace transform in circuit analysis, transfer functions, Fourier series, and transform. The course additionally dwells on two- part circuits, topology in circuit analysis, and state variable analysis.

ELE63433 Microprocessors

In this course, students are introduced to microprocessors system, the 8088/8086 microprocessor, addressing models, the instruction set, and assembly programming of the 8088/8086 hardware specifications, memory interface, input, output interface and interrupts.

ELE63465 Power Electronics

Topics covered in this course are thyristor, power electronic circuits, diode circuits and rectifiers, controlled rectifiers, static switches, AC-voltage controllers, and DC choppers.

ELE63484 Electrical Installations and Safety Systems

This course covers a number of topics: electrical illumination, single-phase wiring, three-phase wiring, alarm safety and control systems, electric plants, safety systems, wiring diagrams, and supply systems for electrical motors.

ELE63430 Digital Electronic Circuits II

This course discusses the internal structure of digital elements at the transistor and layout levels. It also presents the various types of digital families which include RTL, DTL, T(IL, I2L, MOS, CMOS and Ga As. The course's emphasis is on TTL, MOS and CMOS families. The course also includes the study of charge control theory, switching times, and the use of SPICE CAD tool for simulation. The course ends with an introduction to layout design rules.

ELE63234 Advanced Programming and Data Structures

This course has three parts: classic structured programming, data structures, object oriented programming (OOP). The language will be used in studying structured

programming. C++ will be used for data structures and OOP. Data structures include linked lists, trees, queues, stacks, and graphs.

ELE63587 Energy Conversion

This course focuses on sources of energy, principles of fuel for energy conversion, production of solar energy, electric stations and electric conversion stations, separation key, conduction rods, reserve energy requirements, system protection in electric and conversion stations.

ELE63585 Power Systems Analysis and Planning

This course covers energy system balance, energy system protection, measuring transformers, transformers protection, motors and generators protection, conduction rod protection, relaying lines protection, controlling real and induction energy, distribution and transfer networks, planning and designing distribution networks.

ELE63586 Alternative Energy Systems

This course is an introduction to solar energy, analysis of surface collectors, electric solar energy systems, wind power energy, biogas, and principles of thermal energy system.

ELE63530 Computer Organization and Design

This course begins with an illustration of computer components, computer installation and programming. Then the course highlights history of computer, its optimal use, instructions set, computing, tracer, control design (processor) pipe line technique, memory system, inputs/outputs, parallel computation.

ELE63538 Advanced Computer Design

Topics introduced in this course are instructions set; examples of instructions set, main memory, pipe line technique, directed machines, and parallel computation.

ELE63537 Computer Networks

This course includes network applications, WAN, standard network protocols, OSI plan, directed conduction, non-separated services, physical layer, data connected layers, network layer, transmission layer, controlled layer, application layer and presentation layer.

ELE63501 Special Problems

This course focuses on ADM, SDM, PCM and resultant noise. It also introduces different ways of signaling and TDM, error probability, types of digital systems: PSK, FSK and ASK.

ELE63526 Microwaves

This course introduces electromagnetic waves and transmission line, Smith chart, fibre optics, wave guide, microwave equipment and microwave measurements.

ELE63524 Communications Systems

This course covers a number of topics: the television system from studio to viewer,

frequencies used, content of dispatched signal, white and black TV, color TV, satellite system, types of orbits, noise, multi-linking techniques, telephone unit, network, linking process, Radar system and its types, optical communication process, range and speed measurements.

ELE63523 Digital Communications

Entropy, information theory, source coding, channel capacity, channel coding, error control coding are all covered in the course.

FACULTY MEMBERS

Associate Professors

Mazin Rasikh Ph.D. in Micromagnetic Devices,
Cardiff University, UK, 1980.

Assistant Professors

Marwan Mahmoud Ph.D. in Solar Energy,
Technical University, Zurich, Switzerland, 1982.

Allam Mousa Ph.D. in Digital Communications
Eastern Mediterranean University, North Cyprus, 1996.

Khalid Salah Ph.D. in Electronic Devices Applications,
University of California, California, U.S.A., 1986.

Mu'tasem Ba'ba' Ph.D. in Energy Management,
Virginia State University, Virginia, U.S.A., 1987.

Maher Khamash Ph.D in Electric Power Systems,
Moscow Power Institute, Moscow, Russia, 1993.

Imad Ibreak Ph.D. in Electric Power,
Venesa State Technical University, Ukraine, 1996.

Instructor

Jamal Kharousheh M.Sc. in Electronics,
University of Jordan, Amman, Jordan, 1988.

DEPARTMENT OF CHEMICAL ENGINEERING

Requirements for a B. Sc. in Chemical Engineering (Dept. code #4)

Like other departments in the College of Engineering, the Department of Chemical Engineering offers a single specialization in chemical engineering. Students wishing to obtain a B. Sc. in C.E. must successfully complete 175 credit hours which include university, college and department compulsory and elective courses, in addition to two "free" courses (6 credit hours).

A. Compulsory courses (117 credits)

A1 Compulsory courses

Course #	Course title	Credit hrs	Prerequisite
64201	Introduction to Chemical Engineering	1	-
64202	Principles of Chemical Engineering Calculations	3	23101
64203	Numerical Analysis for Chemical Engineering	3	61201
64311	Material Science	3	23102
64312	Properties of Materials and Corrosion	3	64311
64318	Material and Corrosion Testing Lab	1	64311
64331	Thermodynamics for Chemical Engineering I	3	23241
64332	Thermodynamics for Chemical Engineering II	3	64331
64333	Fluid Mechanics	3	61110
64334	Heat Transfer Operations	3	64333
64338	Fluid Mechanics Lab	1	64333
64339	Heat Transfer Operations Lab	1	64334
64351	Process Modelling and Simulation	3	64332
64421	Chemical Reaction Engineering	3	64421
64428	Chemical Reaction Lab	1	64421
64441	Reactor Design	3	64351
64442	Equipment Design	3	64351+64203
64451	Operations Control	3	64451
64458	Operations Control Lab	1	64334
64461	Mass Transfer	3	64462

	Operations		
64462	Unit Operations	3	64462
64468	Unit Operations Lab	1	Dept. approval
64471	Organic Chemistry Technology	3	Dept. approval
64532	Petrochemicals	2	64332
64588	Environmental Applications	1	Dept. approval
64581	Safety Engineering	3	64442+64541
64443	Chemical Engineering Economics and Plant Management	2	Dept. approval
64542	Plant Design	3	Dept. approval
64582	Environmental Engineering	2	Dept. approval
64591	Senior Project I	2	Dept. approval
64594	Senior Project II	3	-
64392	Internship	3	23101
	Total	77	

A2 Compulsory courses offered by Department of Civil Engineering

Course #	Course title	Credit hrs	Prerequisite
61201	Fortran Programming	3	21102
61110	Statics	3	21101
61212	Strength of Materials	4	61210
	Total	10	

A3 Compulsory courses offered by Department of Electrical Engineering

Course #	Course title	Credit hrs	Prerequisite
64301	Electrical Circuits and Chemical Engineering	3	22102
	Total	3	

A4 Compulsory courses offered by Department of Mathematics

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21102
21203	Differential Equations	3	21201
	Total	6	

A5 Compulsory courses offered by Department of Chemistry

Course #	Course title	Credit hrs	Prerequisite
23101	General Chemistry I	3	-
23107	General Chemistry Lab I	1	23101 / concurrent
23102	General Chemistry II	3	23101
23108	General Chemistry Lab II	1	23107 / 23102
23211	Analytical Chemistry	3	23102
23215	Analytical Chemistry Lab	1	23108
23238	Organic Chemistry	3	23102
23235	Organic Chemistry Lab	2	23238
23241	Physical Chemistry	3	23102
23345	Physical Chemistry Lab	1	23241
	Total	21	

Department elective courses
(Student may choose 9 credit hours from the following group)

Course #	Course title	Credit hrs	Prerequisite
64521	Separation Process	3	Dept. approval
64472	Inorganic Chemistry Technology	3	Dept. approval
64473	Light Chemical Industries	3	Dept. approval
64551	Experimental Design and Analysis	3	Dept. approval
64592	Biochemical Technology	3	Dept. approval
64571	Food Processing Technology	3	Dept. approval

64572	Polymers Technology	3	Dept. approval
64575	Petrochemical Technology	3	Dept. approval
64574	Mineral Processing	3	Dept. approval
64593	Special Topics (not covered above)	3	Dept. approval
64492	Applications on Transport Phenomenon	3	Dept. approval

Course descriptions:

CHE64201 Introduction to Chemical Engineering

The course aims at introducing students to the science of chemical engineering related to matter. The course covers the definition of chemical engineering, the role of a chemist in industry, unit systems and their transformation techniques, dimensions, dimensional homogeneity, techniques of calculating and representing data in industrial operations.

CHE64202 Principles of Chemical Engineering Calculations

This course aims at studying material and energy balances in feedback and continuous systems, as well as chemical reaction and non-reaction systems. The course also covers multiple and single stage systems, concepts of units, chemical engineering calculations, synthesis of chemical processes, analysis of chemical processes by material and energy balances, behaviors of fluids, enthalpy calculations for changes of temperature, phase and chemical reactions, unsteady state of energy and material balances. The course ends with a full study of an industrial operation.

CHE64203 Numerical Analysis for Engineers

The purpose of this course is to introduce students to different numerical techniques used in chemical processes. Students also learn how to solve linear and non-linear equation systems, numerical integration, partial and normal differential equations by using finite difference and their applications in some chemical processes.

CHE64311 Material Science

Students in this course learn about tools of examination, temperature measurement, metallography, tests for mechanical properties, non-destructive testing, crystalline structure of metals, plastic deformation and working of metals, solidification, solidification theory of liquid metals, equilibrium phase diagrams of binary systems, the iron carbon phase diagram, phase transformations in steel, heat treatment of steel, classification of steels, and the effect of alloying elements, tool steels, cast irons, non-ferrous metals and alloys, metals at high and low temperatures, wear of metals and failure analysis.

CHE64312 Properties of Materials and Corrosion

Students in this course are introduced to theories and principles of corrosion and its prevention, localized corrosion, pitting, crevice corrosion, erosion, cavitation, metallurgical factors, welding problems, material selection, stress corrosion, cracking, corrosion fatigue, inspection, non-destructive testing, water treatment for boilers and condensers, inhibition, chemical cleaning, biological corrosion, hot corrosion, techniques of corrosion testing.

CHE64331 Thermodynamics for Chemical Engineering I

The aim of this course is to introduce thermodynamics and thermal sciences in general. This includes introduction to thermal dynamics, thermodynamics first law for closed and open systems, flow and work; thermodynamics second law for dispersion, applications on equipment such as pumps and compressors, different thermodynamics rotations; thermal machine rotation, Rankin rotation and heat transfer rotations, cooling and airconditioning rotations. The course ends with an introduction to thermodynamics' third law.

CHE64332 Thermodynamics for Chemical Engineering II

This course aims at reinforcing student's knowledge about thermodynamics. It covers laws relevant to thermodynamics for chemical engineering. Topics covered include thermodynamic properties of homogeneous mixtures, partial molal properties, fugacity, ideal and non-ideal solutions, heat of mixing and excess properties, phase equilibria, miscibility, activity coefficient, Gubbs-Duhern equations, chemical reaction equilibria.

CHE64333 Fluid Mechanics

This course begins with an introduction to fluid behaviour, the overall material, energy and momentum balances, flow measurement, laminar and turbulent flow of compressible and non-compressible fluids. Then it moves to dimensional analysis, hydraulic machines, hydrostatics, speed curves, drop of pressure, surface resistance to flow. The course also dwells on pumps, compressors, turbines and blenders, fluid flow subject to pressure. The course ends with an introduction to dual flow.

CHE64334 Heat and Mass Transfer

This course is a study of thermal properties of materials conduction through simple shape and composite materials convection, overall heat transfer coefficient, dimensional analysis, film and dropwise condensation, nucleate and film boiling of liquids (evaporation).

CHE64338 Fluid Mechanics Lab

This lab introduces students to fluid properties under different practical conditions. This includes practical experiments on stickness. Students also learn types of flow, its measurement, speed curves, drop of pressure, flow of fluids vulnerable to pressure. This is in addition to the study of some equipment, namely pumps and turbines.

CHE64339 Heat Transfer Operations Lab

This lab aims at showing students the practical processes of heat transfer. Experiments include process of conductors, work, ray, thermal exchanges, heat transfer in fluid layers,

evaporation, condensation and drying.

CHE64351 Process Modeling and Simulation

This course is a review of physical laws considered the foundation of mathematical modeling used in physical systems. The course also looks at mathematized modeling of important chemical engineering systems, solving differential equations characterizing chemical processes through analysis by using digital and analog computer techniques.

CHE64421 Chemical Reactor Engineering

This course aims at making students acquire sufficient knowledge about chemical reactions, and reactor designs. Topics covered in this course include kinetic chemistry for homogeneous reactions, speed of reactions, single-stage reactors, continuous-stirred tank reactor, pipe reactor, time of its stay and measurements, output and selection of steady heat reactors with multi reactions, influence of heat and optimum selection.

CHE64428 Chemical Reactor Engineering Lab

This lab acquaints the student with the properties of different chemical reactors. Experiments include pipe reactor, fluid reactor, material-activating reactor, single-stage reactor and stacked condensor reactor.

CHE64441 Reactor Design

This course capitalizes on student's knowledge acquired in a prerequisite for this course. Topics covered are fundamentals of thermodynamics and kinetics of chemical reaction, analysis of batch, plug law and continuous stirred tank reactors for different types of reactions, non-ideal reaction analysis, including residence time distributions, back-mixing and dispersion models, mass and energy limitations in heterogeneous reaction systems, catalyst effectiveness, reactor stability and sensitivity to operating parameters, optimization of reactor design, factors affecting choice of reactor, interrelations of kinetics, thermodynamics and unit operations.

CHE64442 Equipment Design

As the title indicates, the course provides the student with the basics of equipment design and the comprehensive strategy to design chemical equipment. Topics covered include high pressure vessels, cylindrical vessels, spherical methods of fabrication, materials of construction, reasons for vessels' failure, thin tank design of closure, tall vertical vessels, self-supported and guyed vessels, flanges and gaskets.

CHE64451, CHE64458 Process and Control + Lab

This course helps students to acquire the necessary knowledge in chemical processes. Topics covered include Laplace transformations and transfer functions, frequency response, feed-back and feed-forward control, open-loop and closed-loop stability and analysis using root locus and Nyquist techniques, design of feedback controllers with time and frequency domain specifications, experimental process identification, and an introduction to sampled-data control theory. In the lab course, students learn practically how to control industrial processes. Experiments conducted in lab include pressure control, temperature control, control of liquid level, control of PH degree, control of stirred tank and the design of closed circuit operations.

CHE64461 Mass Transfer Operations

In this course, students are introduced to molecular diffusion in fluids, mass transfers, mass transfer in continuous contacting systems and stage-wise processes, counter-current processes, design and performance of mass transfer equipment, analogy between mass, heat and momentum flows.

CHE64462 Unit Operations

This course is a study of necessary equations of design to apply them in the design of different chemical processes: absorption and stripping, distillation, solvent extractions, evaporative cooling, solid drying, crystallization, ion exchange, filtration, screening, sedimentation, computation methods in multistage and multicomponent systems and operations including particulate solids.

CHE64468 Unit Operations Lab

This Lab course aims at helping students acquire practical knowledge of industrial unit operations. Experiments conducted include distillation, diffusion, absorption, stripping, evaporative cooling, crystallization, extraction of crystallized liquids, operations of mixing solid and liquid materials.

CHE64471 Organic Chemistry Technology

This course is a study of chemical process industries that exist in Jordan, such as petroleum refining, fertilizers (phosphate and potassium), cement, pharmaceuticals, etc. Principles of unit operations, unit processes and equipment are also studied. Students will also pay visits to plants.

CHE64532 Petrochemicals

In this course, the students are directed towards the study of the basics of chemical engineering. Topics offered are origin of petroleum, petroleum properties, petroleum products and their uses. The course also covers other topics such as refinery organization, refinery feedstocks and products, crude oil distillation, cracking and reforming alkylation, lubrication oil production, petroleum gases, petroleum chemistry & occurrence, composition of crude oil, hydrogenation, and isomerization.

CHE64443 Chemical Engineering Economics and Applications

Topics covered in this course include cost of engineering learning, value of time in money and its equivalent, consumption taxes, continuous interest and discount, profitability, inflation, analysis of even point, investment of capital, estimation of running costs of chemical plants.

CHE64581 Engineering Safety

This course teaches students the proper ways to be followed in industry. These include proper handling of toxic and dangerous materials, basics of inflammation, fires, and explosions, ways of protection from both fires and explosions as well as relevant legislation concerning occupational safety.

CHE64583 Environmental Engineering + CHE64588 Environmental Applications
(Concurrent courses 2 + 1 credits)

The aim of this course is to direct the student of chemical engineering to the hows of dealing with the environment when practising his profession. The course will acquaint the student with pollution and its control. Topics covered include air pollution, source of pollutions, ways of measurement and analysis. Students also learn about ways of pollutant emissions and how to control them in closed and open plants. Students are also introduced to legislations concerning air and water pollutions and their sources as well as their detrimental effects. They also receive instructions on ways of measuring and analyzing pollution. The course ends with a look at polluted and waste water processing techniques and legislations concerning water pollution.

CHE64591 Senior Project

In this course, a student undertakes an independent project for the design and development of local industries, either experimental, theoretical or both, in any area of chemical engineering under the supervision of a faculty advisor. The objective of the project is to show the student how to apply his/her knowledge of chemical engineering principles to a problem and in doing so to demonstrate his/her skills and creativity. The problem may be tackled by a group of students but contributions should be individually assessed. At the end of the term, the student must give an oral presentation of his/her project.

CHE64593 Transport Phenomena

Topics covered in this course include principles of transport of energy, momentum and mass and the analogies between them, transport coefficients and their evaluation/applications, in variable-property fields within a phase, dimensional analysis, use of Nusselt, Prandtl, Reynolds and Schmidt numbers in selected practical situations.

CHE64594 Senior Project II

In this project, the student applies what he/she has found in the Senior Project I. He/she will make visits to Palestinian plants and design a piece of equipment in the college labs.

CHE64652 Plant Design

Students in this course acquire basic skills necessary for the design of chemical plants. Topics cover construction materials used in chemical plant building, erosion, mechanical properties, handling of materials and their selection, equipment symbols (codes) and drawings, ancillary services for unit operations, plant site and planning. Further, students learn about types of industrial waste and its control, industrial safety, maintenance, machine selections, precise machine plans, and piping. The course ends with an introduction to optimal selection for processes, compound and single variables, ways of exploration, linear and dynamic programming as well as different computer applications.

FACULTY MEMBERS

Assistant Professors:

Amer el-Hamouz Ph.D. in Reactor Engineering and Separation Processes,
UMIST University, UK, 1992.

Associate Professor

Husni Odeh Ph.D. in Tower Installations,
Budapest University for Technology,
Budapest, Hungary, 1992.

Maher Al-Ja'bari Ph.D. in Granule Systems and Transport Phenomena,
McGill University, Montreal, Canada, 1994.

Abdelrahim Abusafa Ph.D. in Unit Operations and Separation Processes,
Middle East Technical University, Ankara, Turkey, 1999.

Instructors

Shadi Sawalha M.Sc. in Innovative Materials and Technologies,
University of Lecce, Italy, 2001.

DEPARTMENT OF INDUSTRIAL ENGINEERING

Admission requirements

To join the Department of Industrial Engineering, a student must successfully complete Mathematics I 21101; Mathematics II 21102; Physics I 22101; Physics II 22102; Chemistry I 23101; Chemistry II 23102. A minimum of 70% must be obtained in all of the aforementioned courses.

I. Requirements for a B.Sc. in Industrial Engineering (Dept. code #5)

The Department of Industrial Engineering offers a single specialization in Industrial Engineering leading to a B.Sc. in the same major. Students wishing to major in Industrial Engineering must complete 175 credit hours successfully. These include university, college, and department compulsory and elective requirements in addition to the “free” courses. (Comp. Courses, 114 credits).

IA. Compulsory courses from Department of Mathematics (College of Science).

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21101, 21102
21203	Differential Equations	3	21101, 21102
21241	Linear Algebra	3	21101, 21102
Total		9	

IB. Compulsory courses from Chemistry Department

Course #	Course title	Credit hrs	Prerequisite
23101	General Chemistry I	3	-
23102	General Chemistry II	3	23101
23107	General Chemistry Lab. I	1	-
23108	General Chemistry Lab II	1	23101, 23107

IC. Compulsory courses from Department of Civil Engineering

Course #	Course title	Credit hrs	Prerequisite
61100	Introduction to Engineering	1	-
61110	Statics	3	22101
61211	Dynamics	3	61110
	Total	7	

ID. Compulsory courses from Department of Electrical Engineering

Course #	Course title	Credit hrs	Prerequisite
65260	Electrical Circuits/Industrial	3	-
65261	Electronics	3	65260
65369	Circuits and Electronics Lab	1	65260, 65261
65370	Electrical Machines	3	65260
65478	Electrical Machines Lab	1	65370
	Total	11	

IE. Compulsory courses from Dept. of Industrial Engineering (76 credit hours)

Course #	Course title	Credit hrs	Prerequisite
65200	Introduction to Industrial Engineering	2	-
65210	Industrial Accounting	3	65260
65201	Programming Languages	3	65260, 65261
65211	Quantitative Methods	3	21101, 21102
65302	Computational Methods	3	65201
65303	Numerical Methods for Engineers	3	65201, 21241
65330	Engineering Economics	3	21201
65304	Fluid and Thermal Sciences	3	21102, 23102
65309	Fluid and Thermal Sciences Lab.	1	65304
65320	Strength of Materials	3	61110
65321	Properties of Engineering Material	3	23102
65322	Metallurgy	2	65321
65328	Properties of Engineering Materials (Lab)	1	65321
65340	Manufacturing Processes I	3	-
65360	Engineering Metrology and Standards	3	-
65412	Statistical Quality Control I	3	65211
65413	Operations Research I	3	65211, 21101, 21241
65431	Production and Inventory	3	65211

	Control		
65441	Manufacturing Processes II	3	65340
65449	Manufacturing Processes Lab.	1	65441
65450	Machine Elements Design	3	65320
65442	Concepts in Computer Integrated Man.	2	65441
65461	Control Systems	3	65260, 21203
65462	Engineering Measurements	3	65210
65468	Control Systems Lab.	1	-
65469	Engineering Measurements Lab.	1	65462
65480	Safety Engineering and Human Factors	3	-
65570	Reliability and Maintenance Engineering	3	65211
65589	Safety Engineering and Human Factors Lab.	1	-
65590	Internship	3	65480
65591	Graduation Design Project I	1	-
65592	Graduation Design Project II	3	65591
	Total	79	

II. Department Technical Elective Requirements

(from Department of Industrial Engineering: 12 credit hours)

Note: To determine one's major, a student may choose 12 credits from 5th year level Industrial Engineering courses.

IIA. Engineering Management

Course #	Course title	Credit hrs	Prerequisite
65514	Statistical Quality Control II	3	65412
65515	Operations Research II	3	65413
65516	Statistical Methods in Industrial Engineering	3	65211
65517	Decision Analysis	3	65211
65531	Total Quality	3	65370

	Management		
65532	Methods of Engineering	3	-
65533	Simulation	3	65211
65534	Project Management and Network Analysis	3	65211
65535	Intelligent Systems	3	-
65536	Management Information Systems	3	-
65581	Industrial Safety	3	65480
65582	Human Factors Engineering	3	65480
65551	Plant Layout Design I	3	-

IIB. Manufacturing and Engineering Design

Course #	Course title	Credit hrs	Prerequisite
65543	Non-Traditional Manufacturing Processes	3	65441
65581	Intelligent Systems in Manufacturing I	3	65480
65544	Intelligent Systems in Manufacturing II	3	-
65552	Jigs and Fixtures Design	3	-
65553	Product Analysis and Design	3	-
65563	Automation	3	-
65563	Automation	3	65442
65564	Computer-Aided Design	2	65442
65565	Computer Aided Manufacturing (CAM)	2	65442
65568	Computer-Aided Design Lab	1	65565
65569	Computer-Aided Manufacturing Lab	1	65565
65552	Plant Layout Design	3	-
65545	Design of	3	-

	Manufacturing Systems		
65566	Robotics	3	65442

III. Maintenance Engineering

Course #	Course title	Credit hrs	Prerequisite
65533	Simulation	3	65211
65516	Statistical Methods in Industrial Engineering	3	65211
65517	Decision Analysis	3	65211
65571	Maintenance Engineering I	3	65470
65572	Reliability Engineering I	3	65470
65573	Contingency and Fault Tolerance Analysis	3	-
65574	Maintenance Engineering II	3	65571
65575	Reliability Engineering II	3	65572
65576	Maintenance Management	3	-
65577	Computer-Aided Maintenance and Management	3	65576
65578	Corrosion and Protection	3	-
65581	Industrial Safety	3	65480
65579	Maintenance Engineering Lab	1	65571
65536	Management Information Systems	3	-

Free Electives: The student should complete 6 credit hours from courses offered by the College of Engineering or any other college in the university.

Internship: Upon completion of the fourth year, as part of the mandatory courses, the student should receive practical training at an accredited industrial/service establishment for a period of at least eight weeks, equivalent to 3 credit hours.

Course descriptions

INE65200 Introduction to Industrial Engineering

This course traces historical development of industrial engineering and methods currently followed in the field. It also looks at basic theories in management, operations research, quality control and manufacturing processes.

INE65201 Programming Languages

This is an introductory course to computer components and software, programming by using c + d and Fortran. There are also some practical applications in engineering issues.

INE65210 Industrial Accounting

In this introductory course, students receive instruction on management accounting operations, types of costs, budgeting, cost control systems. Students are also introduced to inventory operations forms, quantitative theories, information development and interpretation by decision makers and utilization of commercial software programs.

INE65211 Quantitative Methods

This course is a study of probability theory and its applications in addition to statistics theory and some applications and solutions for engineering problems. Emphasis is also placed on utilization of commercial software programs.

INE65302 Computational Methods

This course aims at introducing students to computer software used in many industrial engineering applications. These include, interalia, text and figure processing statistics, operations research, productivity, c++ and other programs.

INE65303 Numerical Methods for Engineers

This is a comprehensive statistical study of numerical analysis techniques. It is also a study of mathematical solutions for linear and non-linear programming systems as well as solutions for function approximation. The course also acquaints students with computer software packages for numerical analysis methods.

INE65304 Fluid and Thermal Sciences

This course introduces basics of thermal dynamics science: thermodynamic shearing forces and bending moments, stress due to bending, Mohr's circle and other topics.

INE65320 Strength of Materials

This course is a study of basic concepts in strength of materials, design of member under stresses, deformation, shearing forces and bending moments, stress due to bending, Mohr's circle, and other topics.

INE65321 Properties of Engineering Materials

Topics covered include classification of materials, structure of metals, phase diagram, metal alloys, heat treatment of steel ceramics, polymers and composites.

INE65322 Metallurgy

This course covers crystal structure, diffusion in solids, solidification of metals, theory of alloying and alloy hardening of steel and powder metallurgy.

INE65328 Properties of Engineering Materials (Lab)

Emphasis in this course is placed on destructive and non-destructive testing of materials, testing of metal structures, heat treatment of metals and corrosion tests.

INE65330 Engineering Economics

This course focuses on how to deal with projects from an economic perspective. It also deals with discounted cash flows, after tax analysis, inflation and sensitivity analysis, bank interest, socioeconomic project and the use of commercial software packages in calculating project economic feasibility.

INE65340 Manufacturing Processes I

This course is a study of basic manufacturing processes including metal removal operations. The course also offers an introduction to numerical control machining. (course project).

INE65360 Engineering Metrology and Standards

Topics covered are error analysis, calibration of measuring devices, tolerances, measurements of pressure, temperature, force flow and power. The course also covers process of industrial specification and standardization, national and international standards, and coding systems.

INE65304 Fluid and Thermal Sciences (Lab)

Students, under instructor's supervision, will conduct experiments to support material taken in INE65304 such as the application of thermodynamics law.

INE65412 Statistical Quality Control I

Topics covered in this course are statistical analysis of quality in manufacturing, control charts, acceptance of samples and case studies. This will be in addition to extensive use of commercial software packages.

INE65413 Operations Research I

This course is a study of deterministic operations research, modeling of linear and integral programming. The course also covers problem formulation, simplex methods and sensitivity analysis. There is also an extensive use of commercial software packages.

INE65431 Production and Inventory Control

Topics covered in this course are organization and functions of manufacturing planning and control, including forecasting theory, capacity planning, III systems, scheduling, and inventory control. There will also be an extensive use of commercial software packages.

INE65441 Manufacturing Processes II

In this course, the emphasis will be on analysis of manufacturing processes from an

economic and mechanical perspectives. There will also be an emphasis on tool life, power consumption, and numerical control programming.

INE65442 Concepts of Computer-Integrated Manufacturing

This course introduces principles of manufacturing automation, CAD representation schemes, data exchange systems, verification of tool path, NC programming, rapid prototyping and manufacturing information systems. There will also be extensive application of CAD/CAM software.

INE65449 Manufacturing Processes Lab

Emphasis, in this course, is on experiments in metal cutting, cutting parameters, and numerical control programming.

INE65450 Machine Elements Design

This course begins with a review of compound stresses, Mohr's circle, breakdown of machine parts under influence of changing and fixed loads. Then the course moves to applications on machine designs including bolts, joints, welded joints, spindles, gears, brakes, clutches, conveyors, rings.

INE65461 Control Systems

Topics covered in this course include feedback control systems, time response of systems, frequency techniques, stability analysis, design and analysis of digital systems.

INE65462 Engineering Measurements

This course covers a number of topics: principles of electrical measurements voltage, current and power measurements, sensors, and transducer, protection equipment, electrical wiring, and installation, and other related topics.

INE65468 Control Systems Lab

This course covers transfer function measurements, process control of open loop systems, servomechanism principles and digital control.

INE65469 Engineering Measurements Lab

Emphasis, in this course, is on experiments to illustrate the concepts of engineering measurements in EM 65462. These experiments include operation of sensors/transducers, and protection systems.

INE65470 Reliability and Maintenance Engineering

Topics covered in this course include reliability plans, study of equations, hazard functions, reliability function, reliability models, maintenance management, relationship between maintenance and reliability and operating availability (course project).

INE65480 Safety Engineering and Human Factors

This course introduces safety measures that must be followed in plants, preventive measures to be available: hazard identification (mechanical, chemical, and electrical hazards). The course also emphasizes process charts, time and motion studies, work

sampling, methods improvements, work place design, job evaluation and wage systems (course project).

INE65589 Safety Engineering and Human Factors (Lab)

Students in this course will be asked to conduct a number of experiments: computer application and simulations on subjects covered in SE 65480. Of these, students will make experiments on time and motion studied and machine guarding.

INE65591 Graduation Design Project I

The course provides an introduction to research methodology, ways of making literature review, the manner of writing technical reports, and specifying topic of graduation project.

INE65592 Graduation Design Project II

This course is mainly a study and an analysis of a specific problem in a field determined jointly by the student and his/her advisor.

FACULTY MEMBERS

Assistant Professors

Ahmed a-Rumahi	Ph.D. in Mechanical Engineering (Machine Theory and Manufacturing), Eastern Mediterranean University, Turkey, 1997.
Amjad al-Ghanem	Ph.D. in Industrial Engineering QC-Production + AI, New Mexico State University, New Mexico, U.S.A., 1994.
Naser Tibi	Ph.D in Optimization of Energy and Environment Applications, University of Florida, U.S.A., 1995.

Instructors

Suleiman Z. A-Daifi	M.Sc. in Mechanical Engineering/Applied, University of Jordan for Science & Technology, Amman, Jordan, 1996.
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DEPARTMENT OF COMPUTER ENGINEERING

Requirements for a B.Sc in Computer Engineering (Dept. code #6)

The Department of Computer Engineering offers a B.Sc. in computer engineering. To join the department, a student must successfully complete Calculus I 21101; Calculus II 21102; Physics I 22101 and Physics II 22102; and Computer Programming 66111. A minimum of 70% must be obtained in Computer Programming 66111. To obtain a B.Sc. in this major, a student must successfully complete 175 credit hours which include university, college, and department compulsory and elective courses and two “free” courses. (six credits)

Compulsory courses (111 credit hours)

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21102
21203	Differential Equations	3	21201
21231	Statistical Methods	3	-
21241	Linear Algebra	3	-
21321	Numerical Analysis	3	66111
23101	General Chemistry	3	-
23107	General Chemistry Lab. I	1	-
63211	Electrical Circuits I	3	22102
63212	Electrical Circuits II	3	63211
63218	Electrical Circuits Lab II	1	63211
63251	Electromagnetic Theory	3	63211
63260	Electronic Circuits I	3	63211
63321	Systems & Signal Analysis	3	63212
63363	Electronic Circuits II	3	63260
63365	Electronic Circuits Lab	1	63260
63442	Control Systems	3	63321
63448	Control Systems Lab	1	63321
66111	Computer Programming	3	-
66211	Data Structure and Algorithms	3	66111

66212	Object Oriented Programming	3	66211
66221	Digital Circuit Design I	3	-
66291	Digital Circuits Design Lab I	1	66212
66312	Software Engineering	3	66212
66314	Algorithms and Computational Complexity	-	-
66315	Database Systems	3	66211
66321	Digital Circuit Design II	3	66221
66322	Microprocessors	3	66221
66323	Computer Architecture I	3	66322
66371	Communications and Signal Processing	3	63212
66392	Microprocessors Lab	1	66322
66418	Computer Graphics	3	63251
66422	Advanced Microprocessors	3	66322
66423	Computer Architecture II	3	66323
66425	Embedded Control and PLC	3	66321
66451	Operating Systems	3	66211
66453	Computer Networks	3	66451
66475	IT Business Management	3	-
66493	Computer Design Lab	1	66323
66495	Embedded Control Lab	1	-
66521	Computer Components and Interfacing	3	63371
66581	Graduation Project I	3	-
66582	Graduation Project II	3	-
66594	Network Lab	1	66453

Total		111	
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Elective courses (18 credits)

Course #	Course title	Credit hrs	Prerequisite
66415	Advanced Database Systems	3	66315
66416	Compiler Construction	3	66211
66417	Artificial Intelligence	3	66212
66464	Special Topics I	3	-
66523	Parallel Processing	3	66323
66524	Advanced Networking	3	66453
66525	Real-time Systems	3	66323
66526	Fault Tolerant Computing	3	66323
66551	Advanced Operating Systems	3	66451
66553	Network Programming	3	66453
66561	System Programming	3	66323
66562	Intelligent Computational Techniques	3	66212
66563	Multimedia Applications	3	66212
66564	Special Topics II	3	-
66568	Very Large Scale Integration (VLSI)	3	66323

Note: COE66304 Internship for eight weeks after completion of fourth year (3 credits)

Course Descriptions

COE63211 Electrical Circuits I

This course covers circuit variables, and elements, simple resistive circuits, techniques of circuit analysis, inductance, and capacitance, natural and step response of RL, RC, RLC circuits.

COE63212 Electrical Circuits II

Topics covered include sinusoidal steady state analysis, balanced three-phase circuit,

mutual inductance, series and parallel resonance, Laplace transform in circuit analysis.

COE63251 Electromagnetic Theory

This course introduces several topics: static electric field, dielectrics, polarization, field distributions of charges. The course also introduces fields of steady electric currents, field at boundary conditions, ferromagnetic material and Maxwell equations.

COE63260 Electronic Circuits I

Topics covered in this course are electronic device principles, P-N junction diode and applications, Zener diode and other terminal devices, Bipolar and FET transistor biasing, small signal models for diodes and transistors system and signal analysis.

COE63321 Systems & Signal Analysis

Students study Laplace transform in circuit analysis, the transfer function, Fourier series and Fourier transform two-port circuits, topology in circuit analysis, state variable analysis.

COE63363 Electronic Circuits II

This course covers BJT amplifier analysis: CE, CC, and CB, and FET amplifier analysis: CS, CD and CE, multistage, amplifier, differential amplifiers, and operational amplifiers.

COE63442 Control Systems

Topics covered in this course are Laplace transform, system representation, frequency response, bode plots, polar plots, root locus compensation cascade and feedback compensation, frequency response plot. The course also introduces state space trajectories and state variable feedback into modern control, development of the solution time criterion, use of quadratic performance index. The course ends with computer applications.

COE66111 Computer Programming

This course introduces students to basic programming concepts, with writing, executing and debugging programs, concepts of modularity and encapsulation. The course also focuses on modules and abstract data types. The course also covers basic data structures.

COE66211 Data Structure and Algorithms

This course introduces data types and structures, dynamic storage allocation, linked lists, binary tree representations and traversals. This will be in addition to general trees, searching and sorting queues and stacks, hashing, graphs, depth-first algorithms, breadth-first search.

COE66212 Object-Oriented Programming

This course, as the title indicates, introduces object-oriented programming concepts, concepts of classes, single and multiple inheritance, polymorphism, writing programs using object-oriented language such as "C" and "Java".

COE66221 Digital Circuit Design I

Topics covered in this course are Boolean algebra, logic gate, combinational network design, sequential circuits, flip-flops, counters, registers, state machines, synchronous and asynchronous systems.

COE66312 Software Engineering

This course focuses on specification, implementation, and testing of large software systems, information hiding, abstraction, software development environments, and formed specifications as well as software design and evolution. Other topics covered include software and system safety, reverse engineering, real-time software, programming environments, verification and validation.

COE66314 Algorithms and Computational Complexity

This course covers a number of topics: design and analysis of algorithms and data structures, techniques for design of efficient algorithms, methods for showing lower bounds on computational complexity; time and space complexity, and NP-complete problems.

COE66315 Database Systems

This course introduces fundamental concepts, system organization, and implementation of database systems, relational, hierarchical and network data models; file organizations and data structures; query languages; query optimization; database design, concurrency control; security; issues involving distributed database systems.

COE66321 Digital Circuits Design II

Topics emphasized in this course are algorithms state in machine design, asynchronous circuits, analog to digital and digital to analog conversion, internal structure of digital elements at the transistor and layout levels; logic families: RTL, DTL, TTL, I²L, MOS, CMOS, and GaAS. The course also emphasizes TTL, MOS, and CMOS families, switching times, and the use of SPICE, CAD tool for simulation. The course ends with an introduction to layout design rules.

COE66322 Microprocessors

Topics covered in this course are microprocessor, addressing modes, instruction set and assembly programming of the 8088/8086, hardware specifications, memory interface, input/output interface, and interrupts.

COE66323 Computer Architecture I

This course covers computer components, hardware/software interface, historical overview, computer performance, instruction set, arithmetic, data path and control design (the processor), pipelining, memory system, input/output, introduction to parallel processing.

COE66371 Communications and Signal Processing

This course explains AM modulations, frequency modulation, sampling theory, pulse code modulation, digital modulation techniques, coding, discrete signals, Z-transform, and digital filters.

COE66415 Advanced Database Systems

This course introduces relational, hierarchical distributed database systems and network data models, concurrency, control, implementation of distributed database systems by using specialized database development tools, e.g. ORACLE.

COE66416 Compiler Construction

This course is devoted to fundamentals of compilers and interpreters for symbol tables, lexical analysis, syntax analysis, semantic analysis, code generation, and optimizations for general purpose programming languages.

COE66417 Artificial Intelligence

This course covers topics such as principles and programming techniques of artificial intelligence: symbol manipulations, knowledge, representation, logical and probabilistic reasoning, learning, language understanding, vision, expert systems, programming languages for artificial intelligence.

COE66418 Computer Graphics

This course begins with an introduction to computer image synthesis and interactive computer graphics applications, computer graphics hardware, color image display, even-driven programming. Then the course moves to introduce line drawing, polygon scan conversion, texture mapping, image morphing, image compositing, curves, and surfaces, hidden surface algorithms, local illuminations models, ray tracing and photo, realistic image synthesis.

COE66422 Advanced Microprocessors

This course is devoted to architecture of 32 bit and 64 bit microprocessors, assembly and high level programming of advanced microprocessor systems, study of a family of microprocessors such as 80x86, Pentium, PTT, etc. The course holds a comparative study of different families of microprocessors, in addition to dynamic memory and input/output interfacing.

COE66423 Computer Architecture II

This course builds on CA I 66323. It focuses on instruction set architectures; instruction set examples, memory hierarchy, high performance computer architectures, pipelining, Vector machines, distributed and parallel processing.

COE66425 Embedded Control and PLC

In this course, students will learn about micro-controller architecture and peripherals, embedded operating systems and device drivers, compilers and debuggers, timer and interrupt systems, interfacing of devices, communications. Emphasis is also given to practical application of development platforms, PLC structure and applications. The course also includes building a practical project using a popular embedded controller.

COE66451 Operating Systems

Students, in this course, are introduced to principles of operating systems, process

management, memory management, auxiliary storage, management, resource allocation. The students also receive instruction on operating system design and construction techniques, concurrent programming, operating systems, kernels, deadlock, protection, transaction processing.

COE66453 Computer Networks

This course covers computer network architectures, protocol layers, internet protocols; transmission media, encoding systems, error detection, switching, data link multiple access and channel protocols. In addition, the course introduces network layer, network routing, congestion control, flow control, end-to end transport services, protocols, network security, privacy. There are also other applications including electronic mail, virtual terminals, file transfer, and Internet applications.

COE66464 Special Topics I

This course covers current trends in computer engineering.

COE66475 IT Business Management

Topics include management of IT systems, software and hardware, e-commerce, and network management. The course also emphasizes how to start and manage IT business feasibility study.

COE66521 Computer Components and Interfacing

In this course, students learn about structure and components of hardware and software systems, in addition to machine organization, including central processor and input/output architectures; the course also covers operating systems: process, memory, storage, and file management, drives and drivers, floppy and hard disks, CD- ROMS, interface cards.

COE66523 Parallel Processing

Topics covered in this course include parallel processing concepts, SIMD and MIMD machines, shared memory and message passing machines, Other topics include parallel programming, special-purpose parallel machines, array processors, and data-flow machines.

COE66524 Advanced Networking

Students, in this course, receive instructions on broad band networks, wireless networks, AIM networks, high performance network, protocol stacks, network software, future trends in networking.

COE66525 Real-Time Systems

This course introduces principles of real time systems, design and construction of software for real time computer systems, software architectures; the course also raises requirements and specification methods, scheduling algorithms and timing analysis, real-time operating systems, and real time programming languages.

COE66526 Fault Tolerant Computing

To take this course, students should have had basic knowledge of digital systems. This course covers faults and their manifestation, issues, theory, and techniques of reliable systems design, testing, design for testability, self-checking and fail state circuits, coding techniques and system level fault diagnosis, fault tolerant communication, reliable software design.

COE66551 Advanced Operating Systems

Topics covered include operating systems, protection, virtual memory, communication mechanisms, concurrency, higher eight threads, object-oriented systems, distributed systems, and transaction support in operating system and remote procedure calls.

COE66553 Network Programming

This course is designed to teach students about event and interrupt driver programming, network protocol implementation, error control implementation, communication programming: TCP/ IP programming. In addition, students will practice layer programming. The course also emphasizes writing significant network application programs.

COE66561 System Programming

Students, in this course, learn about basic input/output system (BIOS) programming, interrupt handles, event programming, device driver programming, and operating system related programming.

COE66562 Intelligent Computational Techniques

Topics covered include neural networks, fuzzy logic, and genetic algorithms.

COE66563 Multimedia Applications

Emphasis in this course is on developing multimedia applications, computer animations, and using multimedia applications tools. Students are expected to develop a practical application using multimedia tools.

COE66564 Special Topics II

Emphasis is on current trends in computer engineering.

COE66568 Very Large Scale Integration VLSI)

This course introduces CMOS technology and circuit design, implementation of combinational and sequential logic VL SI design methodologies, CAD tools for layout, simulation, and validation.

COE66581 Graduation Project I

The student will design and implement a practical software package.

CO66582 Graduation Project II

In this course, each student is expected to design and implement the hardware and software for a practical system.

FACULTY MEMBERS

Assistant Professors

Raed el-Qadi Ph. D. in Computer Engineering,
University of Wisconsin, Madison, WI., USA, 1995.

Loai M. Malhis Ph.D in Computer Engineering
University of Arizona, USA, 1996.

DEPARTMENT OF MECHANICAL ENGINEERING

Admission Requirements

Students are accepted into the Mechanical Engineering Department according to the following criteria:

- 1) A student must first fulfill the College of Engineering specialization requirements.
- 2) A student must successfully complete Calculus I, Calculus II, General Physics I, and General Physics II with an average score of at least 75%.

I. Requirements for a B.Sc. in Mechanical Engineering (Dept. code # 7)

The Department of Mechanical Engineering offers a five-year program of study leading to the degree of Bachelor of Science in mechanical engineering. Actually, the students of the department can choose one of two majors: Mechatronics, or Heating, Ventilation & Air Conditioning. The B.Sc. in mechanical engineering is awarded to students after their successful completion of 175 credit hours, including university, college, and departmental compulsory and elective requirements, in addition to the “free” courses. The department requirements are 132 credit hours.

IA. Compulsory courses from Department of Mathematics (College of Science)

Course #	Course title	Credit hrs	Prerequisite
21201	Calculus III	3	21102
21203	Differential Equations	3	21201
21241	Linear Algebra	3	21102
	Total	9	

IB. Compulsory courses from Department of Chemistry (College of Science)

Course #	Course title	Credit hrs	Prerequisite
23101	General Chemistry I	3	-
23107	General Chemistry I Lab	1	-
	Total	4	

IC. Compulsory courses from Department of Electrical Engineering

Course #	Course title	Credit hrs	Prerequisite
67212	Electrical Circuits	3	21102, 22102
67222	Electronics	3	67212
67227	Electrical Circuits and Electronics Lab	1	67212

67316	Electrical Machines	3	67212
67419	Electrical Machines Lab	3	67316
67424	Microprocessor	1	67222
67518	Microprocessor Lab	1	67424
	Total	15	

ID. Compulsory courses from Department of Computer Engineering

Course #	Course title	Credit hrs	Prerequisite
66111	Programming Language	3	-
	Total	3	

IE. Compulsory courses from Department of Mechanical Engineering (80 credit hours)

Course #	Course title	Credit hrs	Prerequisite
67211	Static	3	22101
67221	Dynamics	3	67211
67223	Engineering Economy	2	-
67311	Mechanics of Materials	3	67211
67312	Thermodynamics I	3	23101
67313	Fluid Mechanics	3	21203, 67211
67314	Engineering Materials	3	23101
67315	Instrumentation	3	67212
67321	Thermodynamics II	3	67312
67322	Numerical Methods	3	21241, 67213
67323	Mechanics of Machinery	3	67221
67324	Probability and Statistics	3	21102
67325	Automatic Control	3	67316, 21203
67326	Mechanical Drawing	2	61104
67327	Engineering Materials Lab	1	67314
67411	Machine Design I	3	67221, 67311

67412	Digital Logic	3	67222, 21213
67413	Applied Mathematics for Engineers	3	21203
67415	Heat Transfer	3	21203, 67312
67417	Instrumentation Lab	1	67315
67418	Automatic Control Lab	1	67325
67421	Machine Design II	3	67411
67422	Mechanical Vibrations	3	21203, 67323
67423	Manufacturing Processes	3	67314
67425	Projects in Mechanical Design	1	67411
67427	Thermo-Fluid Lab	1	67321, 67313
67510	Engineering Practice	3	-
67517	Heat Transfer Lab	1	67415
67522	Operational Management	3	67223
67527	Manufacturing Processes Lab	1	67423
67528	Vibrations and Mechanics of Machinery Lab	1	67422
67511	Graduation Project I	2	-
67521	Graduation Project II	3	67511
	Total	80	

II. Department Technical Elective Requirements

Mechanical Engineering students may concentrate on one of the two areas of specialty offered by the department. Each area of specialty requires the completion of 15 credit hours from 5th year level courses. The 15 credits can be chosen as follows:

II.A. Mechatronics:

The student should take at least 9 credits from the courses shown in the table below. The remaining 6 credits should be chosen from courses listed in II.B. or in II.C.

Course #	Course title	Credit hrs	Prerequisite
67540	Digital Logic and Computer Design	3	-
67542	Electronics II	3	67222
67543	Computer Controlled Systems	3	67325, 67424
67544	Fluid Power Control	3	67325, 67424
67545	Industrial Automation	3	67325, 67424
67546	Design of Mechatronic Systems I	3	67325, 67424
67547	Computer Aided Manufacturing	3	67423

II.B. Heating, Ventilation & Air Conditioning:

The student should take at least 9 credit hours from the courses shown in the table below. The remaining 6 credits should be chosen from courses listed in II.A. or in II.C.

Course #	Course title	Credit hrs	Prerequisite
67560	Heat Exchanges Design	3	67415, 67313
67561	Heating, Ventilation and Air Conditioning	3	67321, 67313, 67415
67562	Thermal Power Plants	3	67415, 67321, 67313
67563	Hydraulic of Machinery	3	67313
67564	Fuel and Combustion	3	67321, 67415
67565	Heating and Plumping System of Building	3	67321, 67415, 67313
67566	Refrigeration	3	67415, 67321

II.C. General Technical Electives:

A Mechanical Engineering student in either area of specialty (Mechatronics or Heating, Ventilation & Air Conditioning) may choose at most 6 credit hours from the courses listed in the table below.

Course #	Course title	Credit hrs	Prerequisite
67590	Finite Elements Analysis	3	67413
67591	Mechanics of Materials II	3	67311
67541	Data Structure	3	67213
67581	Electric Drives	3	67212
57582	Robotics in Manufacturing Systems	3	67323, 67325
57583	Special Topics in Mechatronics 1	3	-
57584	Special Topics in Mechatronics 2	1	-
67505	Design of Thermal Systems	3	67322, 67415
67586	Energy Conversion	3	67415
67587	Internal Combustion Engines	3	67321, 67415
67588	Special Topics in Thermal Power	3	-
67589	Special Topics in Thermal Power	1	-
67592	Casting and Welding	3	67423
67593	Numerically Controlled Machining	3	67423
67594	Metal Forming	3	67423
67595	Design for Manufacturing	3	67423, 67425
67596	Design of Mechatronics Systems II	3	67546
67597	Kinematic Synthesis	3	67323

III. Free Electives

The student should complete 6 credit hours from courses offered by the College of

Engineering or other University colleges.

Note: Registration for the practical training (67510) requires successful completion of at least 135 credit hours.

Course Descriptions

MEC61102 Engineering Workshop I

This workshop aims at developing students' basic skills in fields of hand filing, turning, welding, piping and plumbing, carpentry, and sand casting.

MEC61103 I Engineering Workshop

This workshop aims at developing students' basic skills in fields of glass works, sheet metal fabrication, and household electric circuits. Theories related to metal machining, measurements, metal forming, sand casting, and welding are also emphasized.

MEC67211 Statics

Students are introduced to fundamental concepts of mechanics, force vectors, equilibrium of particles and rigid bodies. Analysis of simple structures, internal forces, friction, geometric properties of rigid bodies is also emphasized.

MEC67221 Dynamics

Topics covered are dynamics of particles, two-and three-dimensional dynamics of rigid bodies, force and acceleration, work and energy, impulse and momentum.

MEC67311 Mechanics of Materials I

This course begins with an introduction to mechanics of deformable bodies; concepts of stress and strain, classification of materials behavior, stress-strain relations and generalized Hook's law. Then it moves to applications on engineering problems involving members under axial loads, torsion of circular rods and tubes, bending and shear stresses in beams, combined stresses in beams, transformations of stresses, and buckling.

MEC61104 Engineering Drawing

Students are introduced to instruments and their use, graphical geometry, lettering orthographic and isometric drawing and sketching, sectional views. This course is also an introduction to descriptive geometry, surface intersections and developments, and computer graphics.

MEC67326 Mechanical Drawing

This course covers several topics including auxiliary views, temporary fasteners and springs; their construction and standards, power screws and welding symbols, dimensioning, tolerance, limits and fits using the ISO system, detail and working drawings, and assembly drawings.

MEC67223 Engineering Economy

This course covers a number of topics: Interest formulas, judging attractiveness of proposed investment using different methods, depreciation, inflation, sensitivity analysis, increment cost and sunk cost, retirement and replacement.

MEC67413 Applied Mathematics for Engineers

Students are introduced to Laplace transformation, complex variables and complex integration. There are also applications to solutions of ordinary differential equations, Fourier series, half range expansion, solutions of partial differential equations using separation of variables and Laplace transformation techniques.

MEC67323 Mechanics of Machinery

Topics covered are kinematic analysis of mechanisms, velocity and acceleration polygons, static and inertia force analysis of machinery, dynamic analysis of cams, gears and gear trains, and balancing of machines.

MEC67411 Machine Design I

This course is an introduction to the design process, design considerations, tolerances, fits and surface finish, stress analysis and deflection of mechanical elements. Energy methods, statistical considerations in machine design, failure of machine elements, and fatigue are also introduced.

MEC67313 Fluid Mechanics

Students learn about the properties of fluids, conservation equations and their applications, dimensional analysis and similarity. The course is also an introduction to potential flow, boundary layers, and steady incompressible flow in pipes and ducts. There are also applications to fluid machinery, review of conservation equations, general equations of fluid motion, isentropic flow, normal shock waves and oblique shock waves.

MEC67312 Thermodynamics I

This course covers the properties and behaviors of pure substances, first law and second law analysis applied to different system and control volumes.

MEC67321 Thermodynamics II

Topics covered are availability and irreversibility, vapor and air-standard power and refrigeration cycles, thermodynamic relations, ideal and real mixtures and solutions, chemical reactions and combustion.

MEC67314 Properties of Engineering Materials

Students are introduced to atomic structure and bonding, structure of crystalline solids, imperfections in solids, dislocations and strengthening mechanisms. Phase diagrams and alloy formation, ferrous and non-ferrous metals and alloys are also emphasized.

MEC67423 Manufacturing Processes

Students learn about production of ferrous and non-ferrous materials, casting, powder metallurgy bulk deformation processes, machining, sheet metal work, joining methods, and the shaping of plastics.

MEC67327 Properties of Engineering Materials Lab

This course begins with an introduction to hardness, tensile, compression, impact, torsion, creep and fatigue tests, macro-and micro-examination of metals. Experiments in casting, forming, machining, welding, heat treatment and plastic manufacturing are essential parts of this course.

MEC67412 Digital Logic

This course focuses on linear time invariant systems, Fourier analysis for continuous and discrete-time signals. Filtering and modulation of signals, sampling and Z-transform are also studied

MEC67315 Instrumentation

This course begins with analysis of experimental data and then moves to basic electrical measurement and sensing devices. Displacement, area, pressure, flow, temperature, thermal and properties, force, torque and strain measurements, data acquisition and processing are also included.

MEC67322 Numerical Methods for Engineers

Students in this course are introduced to errors in computations, roots of equations, system of linear algebraic equations including eigenvalue problems, interpolations and curve fitting. Other topics covered are numerical integration and differentiation, ordinary differential equations including boundary and initial value problems. The course ends with an introduction to numerical solutions to partial differential equations.

MEC67422 Mechanical Vibrations

Topics covered are properties of oscillatory motion, derivation of governing differential equations, free and damped vibrations, harmonically excited motion, rotating and reciprocating unbalance, support motion, vibration measurements, vibration isolation, and transient vibrations. The course ends with a look at free and forced vibrations in multi-degree-freedom systems, vibration absorbers, and continuous systems.

MEC67325 Automatic Control

This course examines linear feedback control theory, mathematical modeling of physical systems, transfer functions, block diagrams and signal flow graphs, time domain analysis of control systems, test signals, transient response, time domain specifications, steady-state error and stability. Then the course moves to root locus techniques, time domain design, PID controllers, phase-lead and phase-lag controllers. This course ends with an introduction to and frequency of domain analysis, Nyquist criterion, Bode plot and Nicholas charts.

MEC67417 Instrumentation Lab

Topics examined are system response and performance, vibration and dynamic measurements of systems, data acquisition, strain and temperature measurements, and operational amplifiers.

MEC67421 Machine Design II

Students in this course are introduced to the design of screws, fasteners and connections, welded joints, mechanical springs, spur gears, shafts, belts, chains and roller bearings, lubrication and journal bearings.

MEC67425 Projects in Mechanical Design

In this course applied engineering design projects are selected by the instructor with emphasis on design of practical mechanical engineering systems and/or components.

MEC67415 Heat Transfer

This course covers a number of topics: one dimensional conduction, steady and transient analysis, introduction to convection heat transfer, forced convection heat transfer in external flows, and radiation heat transfer, radiation properties, and radiation heat exchange between ideal surfaces. Forced convection heat transfer in internal flows, free convection heat transfer, heat exchangers, boiling and condensation are also covered.

MEC67427 Thermal - Fluid Lab

In this lab., experiments are applied to heat transfer, thermodynamics and fluid mechanics.

MEC67597 Kinematic Synthesis

This course is a study of Kinematic-geometric relations in linkages and mechanical devices, and an analysis and synthesis of mechanisms.

MEC67590 Finite Elements Analysis

This course begins with an introduction to finite elements, integral formulation and variation methods, one dimensional problem, derivation of and assembly of element equations, imposition of boundary conditions, solution of equations. This course ends with an introduction to two dimensional problems, error analysis, and computer applications.

MEC67585 Design of Thermal Systems

Topics covered are modeling of thermal equipment, the development of design philosophy and governing relations for thermal configurations. This course introduces case studies from diverse thermal application areas.

MEC67587 Internal Combustion Engines

This course begins with the classification of internal combustion engines, and then moves to cycles, performance, the ignition system and fuel metering of internal combustion engines.

MEC67561 Heating, Ventilation, and Air Conditioning

This course is a study of air-conditioning processes; psychometrics and humid air calculations, heating-and cooling-load calculations, hot-water systems - theory and design, duct systems - theory and design.

MEC67562 Thermal Power Plants

This course covers several topics: vapor-cycles, gas turbine-cycles, and combined-cycles, steam and gas turbine power plants; components, selection and economics.

MEC67563 Hydraulics of Machinery

This course begins with theoretical analysis of energy transfer between fluid and rotor, and then it moves to principles of axial, mixed-, and radial-flow pumps and turbines, and compressors.

MEC67586 Energy Conversion

This course covers energy growth and economics, renewable energy, and direct energy conversion.

MEC67564 Fuel and Combustion

This course examines fuel properties and handling, combustion thermodynamics, and chemical equilibrium. It is also an introduction to chemical kinetics, and combustion in internal combustion engines.

MEC67566 Refrigeration

This course introduces vapor compression refrigeration systems, cooling load calculations, gas cycles, refrigerants, and absorption refrigeration.

MEC67588 Special Topics in Thermal Power I**MEC67589 Special Topics in Thermal Power II****MEC67324 Probability and Statistics**

Topics covered are probability, random variables and expectations, models of random phenomena, sampling, parameter estimation, hypothesis testing, regression, analysis of variance and life testing.

MEC67592 Casting and Welding

Students in this course are introduced to pattern and core-making processes, solidification of metal and cast structures, gating, risering, feeding and casting, melting furnaces, defects and cleaning of castings, welding processes, control of welding parameters, cutting with beams. This course ends with inspection and quality control.

MEC67594 Metal Forming

This course emphasizes elastic and plastic behavior of materials, fundamentals of metal forming, forging; rolling; extrusion; rod, wire and tube drawing, shearing, bending and stretch forming, spinning, high energy rate forming, and deep drawing.

MEC67595 Design for Manufacturing

This course covers several topics: concurrent engineering, product design simplification, design for variety, tracability, technical risk analysis, life-cycle engineering, feasibility studies and includes team projects.

MEC67543 Computer Controlled Systems

This course examines linear discrete dynamics system analysis and sampled data systems. Then the course moves to discrete equivalents of continuous transfer functions, design of digital control systems, transform and state space methods, quantization effects, sample rate selection, applications and practice of digital control design.

MEC67544 Fluid Power Control

Topics covered are design, analysis, and control of fluid power systems, steady-state analysis of on/off valves, servo-valves, actuators and transmissions, dynamic modeling, response and stability and control analysis via linear element representation and computer simulation. Design (analysis and synthesis) of hydraulic and pneumatic systems is also introduced.

MEC67545 Industrial Automation

Students are introduced to control strategies, measurement devices and their selection (flow, motion, heat transmitters), controllers, actuators (electrical, mechanical, electromechanical, and fluidics), the operator interface. Process analyzer overview, protocols and standards, A/D converters and data acquisition, hardware interfacing with microprocessors, and microcontrollers for smart product and process control. Case studies are also introduced.

MEC67546 Design of Mechatronics Systems

This is a Mechatronics design project course focusing on the application of theoretical principles in electrical engineering to control Mechatronics systems incorporating sensors, actuators and intelligence using microprocessors or microcontrollers. The course requires students to consider real world constraints such as limited volume, payload, electrical power and time.

MEC67596 Design of Mechatronic Systems II

This course is an implementation of the design made in MEC584, by using microprocessor or microcontrollers interfacing, control logic programming, testing and validation. Culmination of project requires a formal report consisting of project results and oral presentation and demonstration of proper functioning.

FACULTY MEMBERS

Assistant Professors

Ahmed a-Rumahi

Ph.D. in Mechanical Engineering
(Machine Theory and Manufacturing),
Eastern Mediterranean University, Turkey, 1997.

Instructors

Suleiman Z. A-Daifi

M.Sc. in Mechanical Engineering/Applied,
University of Jordan for Science & Technology,
Amman, Jordan, 1996.

DEPARTMENT OF BUILDING ENGINEERING

Requirements for a B. Sc. in Building Engineering (Dept. code #8)

The Department of Building Engineering offers a single specialization in building engineering. All students wishing to obtain a B.Sc. must complete 175 credits, which include university, college and department compulsory and elective courses.

Compulsory courses (120 credits)

Course #	Course title	Credit hrs	Prerequisite
68100	Probability and Statistics for Engineers	3	21102
68101	Introduction to Building Engineering	1	-
66111	Computer Language	3	-
68201	Fluid and Thermal Sciences	4	22101
61110	Statics	3	22101.21101
21201	Calculus III	3	21102
21203	Differential Equations	3	21201
65303	Numerical Analysis	3	66111
61202	Electrical Engineering	3	22102
68202	Introduction to Building Mechanical Systems	3	68201
61204	Construction Materials	3	-
61211	Dynamics	3	61110
68211	Introduction to Environmental Control Systems	3	-
61212	Mechanics of Materials	4	61110
61220	Surveying	3	68100
68302	Geology and Soil Mechanics	4	-
68309	Architectural Acoustics	3	61202
68310	HVAC System	3	68202
68311	Fundamentals of	3	61202

	Electrical and Illumination Systems For Buildings		
68312	Fundamentals of Building Core Systems	3	68202
61315	Structural Analysis I	3	61212
61316	Structural Analysis II	3	61315
68372	Introduction to Building Industry	3	-
68401	Structural Design of Buildings I	3	61315
68402	Structural Design of Buildings II	3	68401
68421	Architectural Structural Systems I	3	68401
68422	Architectural Structural Systems II	3	68421
68424	Environmental Control Systems I	3	68211
68439	Modern Structural Systems	3	68402
68441	Integration of Architectural Engineering Systems	3	68422
68444	CADD Applications for Buildings	3	66111
68456	Solar Energy Building System Design	3	68201
68461	Building Illumination	3	68311
61471	Engineering Economy	2	-
68471	Construction Management I	3	68372
68472	Building Construction Estimating	3	68372
68475	Building	3	61204,68372

	Construction Engineering		
68580	Project I	3	-
68581	Project II	3	68580
68380	Practical Training	3	-
	Total	120	

Department Electives (12 credits)

Course #	Course title	Credit hrs	Prerequisite
68403	Structural Design of Buildings III	3	68402
68423	Architectural Structural Systems	3	68422
68454	Advanced Heating, Ventilating, and Air Conditioning	3	68310
68455	Advanced Heating, Ventilating, and Air Condition Design System	3	68310
68458	Advanced Architectural Acoustics and Noise Control	3	68309
68464	Advanced Architectural Illumination Systems Design	3	68461
68467	Advanced Building Electrical System Design	3	68461
68477	Building Construction Assemblies	3	68475
68466	Computer Aided Lighting Design and Analysis	3	68461
68476	Construction Management II	3	68471

Course Descriptions

COE65303 Numerical Methods for Engineers

Students in this course are introduced to errors in computations, roots of equations, system of linear algebraic equations including eigenvalue problems, interpolations and curve fitting, numerical integration and differentiation, ordinary differential equations including boundary and initial value problems, Student also learn about numerical solution of partial differential equations.

COE68201 Fluid and Thermal Sciences

This course begins with an introduction to properties of fluids, fluid statics and fluid dynamics applications of conservation of energy to fluid systems. Then it moves to first

and second laws of thermodynamics, irreversibility and availability with application to pure substances and Ideal gases, one dimensional conduction, convection heat transfer.

COE61110 Statics

Topics covered are fundamental concepts, vectors, equilibrium of force system for particles and rigid bodies, application of principles of statics to structures, axial, shear, and bending moments, friction, centroid, and moment of inertia.

COE61202 Electrical Engineering

This course begins with fundamentals of electricity related systems. Then it moves to linear circuit theory, analysis of AC steady state circuits, electrical machines, amplifiers, transformers and electrical devices, illumination and installation.

COE61211 Dynamics

Students learn about kinematics and kinetics of particles and rigid bodies, energy and momentum, impulse principles and applications.

COE61204 Construction Materials

Students receive instruction on origins, properties and behavior of engineering and building materials including cement, concrete, bituminous concrete, metals, timber, plastics, and composite materials, standard specifications and testing methods. The course ends with quality control and protection procedures, and construction methods.

COE61212 Mechanics of Materials

This course covers several topics: Elementary theories of stress and strain, mechanical properties, torsion, shear and bending moment diagrams, flexural and compound stresses, principal stresses and Mohr's circle, deflection of beams, stability of columns. The course ends with a look at statically indeterminate members.

COE61220 Surveying I

This is a study of distances, angles, elevations, and coordinates, boundary survey leveling, topographic mapping and earth computations. The use of tapes, levels, and transits are also studied.

COE61315 Structural Analysis I

This course is an analysis of statically determinate and indeterminate beams, trusses, and rigid frames, deflections computations by different methods, influence lines for determinate elements.

COE61316 Structural Analysis II

This course is an analysis of statically indeterminate structures, energy theorems, influence lines for indeterminate elements, Matrix methods. The course ends with an introduction to structural dynamics

COE61471 Engineering Economy

Topics covered are concepts, methods and justifications for the economic decisions made

by the engineer regarding short and long term engineering projects, developing skills in the timing of cash-flow and in the calculation of the present and future values

COE68202 Introduction to Building Mechanical Systems

This course is an introduction to thermal, psychometric, energy and human comfort issues in building; building form and the natural environment; plumbing systems.

COE68211 Introduction to Environmental Control Systems

This is a qualitative study of humans in macro- and micro architectural environmental systems.

COE68309 Architectural Acoustics

This course focuses on acoustical design for good hearing conditions and noise control: construction details, materials, acoustical properties of room shapes; sound absorption, transmission.

COE68310 Fundamentals of Heating, Ventilating, and Air Conditioning (HVAC Systems)

Students learn about fundamental principles and engineering procedures for the design of heating ventilating, and air conditioning systems, including energy utilization and constraints.

COE68401 Structural Design of Buildings I

This course is an application of principles of engineering mechanics to layout, analysis, design and detailing of structural elements in wood and steel of simple buildings.

COE68402 Structural Design of Buildings II

Topics covered plain and reinforced concrete; design analysis and detail of beams, slabs, columns, and walls.

COE68403 Structural Design of Buildings III

This course is a continuation of COE68401. It is an advanced analysis, design and detail of the structural elements in wood and steel.

COE68421 Architectural Structural Systems I

This is a qualitative and quantitative analysis and design of architectural structures, force flow; structure configurations; measurement and experiments; design studio critique.

COE68423 Architectural Structural Systems III

This is a continuation of COE68421, with emphasis on structural configuration and construction assemblies.

COE68424 Environmental Control Systems I

This course is a continuation of COE68422, with emphasis on individual studies and research; design and comparative structure types in buildings.

COE68439 Modern Structural Systems

This course focuses on applications of environmental systems in buildings.

COE68441 Integration of Architectural Engineering Systems

This course covers analysis and design of building structures of unusual types.

COE68444 CADD Application for Buildings

This course includes analysis and synthesis of systems- structural, mechanical, electrical, sanitary, construction- considering interrelationship in performance, economics of total systems, computer programs.

COE68454 Advanced Heating, Ventilating, and Air Conditioning

This course is an application of microcomputer based CADD systems to architectural engineering problems including graphics, system customization, and AI programming techniques.

COE68455 Advanced Heating, Ventilating, and Air Conditioning System Design

Students are introduced to engineering design and performance analysis procedures for complex commercial building systems, including energy conservation techniques; design project.

COE68456 Solar Energy Building System Design

Topics covered are design of several different systems for a course project building; control strategy; economic comparisons using life cycle cost techniques.

COE68458 Advanced Architectural Acoustics and Noise Control

Topics covered are solar radiation, collectors, and thermal storage ; design and analysis of a heating system using system simulation computer program.

COE68461 Building Illumination

This course covers advanced consideration of noise control in buildings, ventilating system noise and vibration; acoustic design variables.

COE68422 Architectural Structural Systems II

Topics covered are theory, application of lighting in buildings; electric light sources, related requirement circuitry, illumination design procedures; daylighting.

COE68464 Advanced Architectural Illumination Systems Design

Students are introduced to advanced work in daylighting, light distributions, interreflections, vision, and color; application of theory of operation of motors, transformers, and associated devices.

COE68466 Computer Aided Lighting Design and Analysis

This course focuses on design and analysis of lighting for outdoor, sports, floodlighting; and interior applications; economic analysis, modeling algorithms; design criteria.

COE68467 Advanced Building Electrical System Design

Students are introduced to design of electrical systems for commercial and industrial facilities emphasizing design practice and integration with codes and standards.

COE68477 Building Construction Assemblies

This course highlights performance characteristics and special problems associated with assembly erection procedures for building construction materials and components; case studies of failures.

COE68471 Building Construction Management

This course examines components of building industry, related responsibilities; building trades relationships; building construction contracts and bidding procedures; building construction sequences; industrialization; projects.

COE68472 Building Construction Estimating

Students in this course learn about construction estimating and cost engineering fundamentals; quantity take off; pricing, bid preparation; estimating, cost accounting by computer.

COE68475 Building Construction Engineering

Topics covered in this course include project planning, supervision, inspection of architectural and structural operations in major buildings; mobilization, coordination of trades.

FACULTY MEMBERS

Assistant Professors

Riyad Abdel-Karim	Ph.D. in Structural Engineering Pennsylvania State University, U.S.A., 1989.
Ahmed a-Rumahi	Ph.D. in Mechanical Engineering (Machine Theory and Manufacturing), Eastern Mediterranean University, Turkey, 1997.
Mu'tasem Ba'ba'	Ph.D. in Energy Management, Virginia State University, Virginia, USA, 1987.
Haithem Al-Ratrout	Ph.D in Architecture and Building Sc. University of Strathclyde, Glasgow, U.K, 2002. Research and Teaching Assistant
Muhannad Al-Haj Husien	B.Sc. in Architectural Engineering An-Najah N. University, Nablus, Palestine,

COLLEGE OF AGRICULTURE

Historical background

The teaching of agriculture, at An-Najah National University, began in 1986 with the establishment of the Department of Agriculture, in the College of Science. In 1992, the department became a full-fledged college and the ninth in the university. In 1996, the college was moved to its new campus, known as Khadouri, in Tulkarm. It is worth noting that the new site is one of the most beautiful geographical places in Palestine. It is only about 14 km to the east of the Mediterranean Sea. The campus area is about 400 dunums. However, only 115 dunums belong to the college. The college houses an old building, a cow farm, 60-year-old chicken farms and neighboring agricultural land.

Academic programs

The College of Agriculture has three academic programs all leading to a B.SC. in agriculture :

Department of Plant Production and Protection (Dept. code # 4(

Department of Animal Production and Animal Health (Dept. code # 5(

Department of Agricultural Economics and Rural Development (Dept. code #6(

1. College requirements

1A Courses from College of Science (12 courses carrying 26 credits)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
21103	General Mathematics	3	3	-	-
22109	General Physics	3	3	-	-
22110	General Physics (lab)	1	-	1	22109
23101	General Chemistry I	3	3	-	-
23102	General Chemistry II	3	3	-	23101
23107	General Chemistry (lab-I)	1	-	3	-
23108	General Chemistry (lab-II)	1	-	3	23107
24101	General Biology I	3	3	-	-
24107	General Biology (lab-I)	1	-	3	24101
24102	General Biology II	3	3	-	24101
24108	General Biology (lab-II)	1	-	3	24102
27120	Introduction to Computer Science	3	3	-	21103
	Total	19			

1B Agriculture College courses (11 courses carrying 30 credits)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
94211	Vegetable Production	3	2	3	24102
94212	Principles of Fruit Production	3	2	3	24102
94241	Principles of Soil & Irrigation	3	2	3	24102
94231	Insects and Plant Protection	3	2	3	24102
95211	Poultry Production	3	2	3	24102
95212	Sheep and Goat Production	3	2	3	24102
95313	Dairy Cattle Production	2	-	2	24102
96226	Agriculture in Palestine	2	2	-	93211
96211	Principles of Agricultural Economics	3	3	-	93211
96334	Agricultural Statistics	3	3	-	21103
96425	Food Security	2	2	-	93211
	Total	30			

2. Requirements for specialization: See relevant department.

3. "Free" courses: A student must complete successfully 6 credit hours from university departments' courses.

Course descriptions:

AGR94241 Principles of Soil and Irrigation

This course covers a number of topics: definition of soil, its composition, its important relationship with agriculture, its mineral, chemical and physical properties; underground water, soil conservation, plant feeding and nutrients, organic material, revival of thin soil and land partition.

AGR94211 Vegetable Production

This course examines vegetables in terms of their economic importance and nutritional value, plant description, appropriate environmental conditions, agricultural operations pertinent to the produce, transport, storage, agricultural techniques and times, under rainfall, irrigated and protected conditions.

AGR94212 Principles of Fruit Production

This course will provide students with the necessary information and skills for producing fruits in terms of goals, selection of site and appropriate soil, choice of suitable trunks, preparation of land for agriculture, agriculture systems and breeding, fruit blossom, growth, ripeness and picking, weed and frost fighting with emphasis on fruit trees planted in the region.

AGR94231 Insects and Plant Protection

This course examines harmful insects, nematodes and spiders, as well as harmful bacteria, parasites, and viruses. It also examines how damage is caused and how it is linked to weather and environmental factors. The course also covers techniques used to control the damages and check on causes, and the extent to which chemical pesticides or others can be used and the equipment necessary for that. The course also

looks at damage caused by rodents in fields and in storage, and ways of reducing their harm. The course ends with a reference to international and government legislations introduced to fight diseases.

AGR95211 Poultry Production

This course begins with an introduction to the poultry industry in Palestine, progenies, methods of nutrition, breeding and production. Then it moves to poultry digestive tract, reproduction systems, egg incubation/ hatching layers/ broilers, methods of feeding, raising, and marketing poultry products. The practical portion of the course includes practical applications of production stages, egg storage and marketing, poultry production and farm establishment.

AGR95212 Sheep and Goats Production

The first part of the course focuses on new goat and sheep breeds, husbandry practices compared with local ones, methods of raising and production on natural grazing land and intensive soil, in addition to concepts of nutrition, reproduction and fattening. The practical part stresses the basic skills needed in raising goats and sheep.

AGR95313 Dairy Cattle Production

This course highlights the economic importance of milk and milk products and dual purpose and originally dairy cattle, their characteristics, factors influencing production of milk and its composition, selection of breeds, manger troughs and their control; creation, management and running herds. The course also highlights offspring of milk-producing goats and sheep.

AGR96226 Agriculture in Palestine

Areas covered in this course are the development of agriculture, and its importance at the Arab and international levels, let alone at the local level. The course will also examine agricultural climate, production elements, plant production in irrigated and rainfall areas. In the second part of the course, students will learn about animal production, marketing produce, agricultural mechanization, institutions involved in agriculture, agricultural problems in Palestine and modern developed agricultural projects.

AGR96211 Principles of Agricultural Economics

Main topic covered in this course is economic principles, which include the relationship between production inputs and outputs. The course also examines production cycle, production laws and study of costs. Further, the course discusses the agricultural status in the economic statement and highlights the characteristics of working in agriculture. At the end, the course will deal with the branches of agricultural economics and agricultural policies used in some Arab countries.

AGR96334 Agricultural Statistics

In this course, students will learn how to describe and organize data in graph form and numerical ways as well as through the vertical base and probability theory; random variables, probability distributions and natural distributions, statistical significance in small and large samples. The course will also include the study of major techniques used in research, statistics used in analysis of agricultural phenomena and data. This will be in addition to the study of straight line smooth analysis, correlation, record figures, and trends, sample taking and hypothesis testing.

AGR96425 Food Security

This course covers a number of topics: strategic elements of security, food security approaches, food security and food policies, their tools, fully integrated food plans, population reproduction laws, food budget, green revolution and food security, food assistance, basics of self-reliance, food security from an international perspective, Arab and Palestinian food security, food and poverty, international experiences, economic inflation and nutrition.

DEPARTMENT OF PLANT PRODUCTION AND PROTECTION

Introduction

The Department of Plant Production and Protection awards a B. SC. degree to enable graduates to work in agricultural extension and / teaching. The department endeavors to train students to acquire the necessary skills needed for decision making in line with the requirements of modern agriculture.

Admission Requirements

In order to join the department, a student must have successfully completed 30 credit hours. In addition, he/she must have completed at least 18 credit hours of college requirements.

In addition, a student must successfully complete the following College of Science courses: General Biology I 24101, General Biology I24102. To be admitted into the major, a minimum of 70% must be obtained in all the above mentioned courses, in addition to good academic standing in Fruit Production 94212, Vegetable Production 94211, Poultry Production 95211, and Sheep and Goats Production 95212

1. Study Plan

The department offers a single specialization in Plant Production and Protection. To obtain a B.Sc. in this field, students must successfully complete 142 credit hours.

1A. Compulsory courses (41 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
23233	Organic Chemistry	3	3	-	23102
24231	Genetics	3	2	3	24102
24321	Microbiology	3	2	3	24102
94313	Field Crop Production	3	2	3	94211+94212
94321	Plant Physiology	3	2	3	94211+94212
94332	Plant Pathology	3	2	3	94231
94333	Economic Entomology	3	2	3	94231
94334	Agricultural Pesticides	3	3	-	94231
94343	Irrigation and Drainage systems	3	2	3	94241
94345	Agricultural Machinery	2	2	-	-
94414	Evergreen Fruit Tree Production	2	2	-	94212
94416	Protected Agriculture	3	2	3	94211
94422	Plant Breeding and Improvement	3	3	-	94251
94442	Soil Fertility and Fertilizers	3	2	3	94241
94462	Seminar in Plant Production	1	1	-	4th year

	and Protection				level
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1B. Elective courses (12 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
94315	Forage Crop Production	3	2	3	24102
94317	Principles of Forestry	3	2	3	24102
94318	Ornamental Plants and Gardening	3	2	3	24102
94319	Selected Topics	3	3	-	24102
94323	Plant Propagation and Nurseries	3	2	3	94212
94354	Biological Control	2	2	-	94231
94424	Biotechnology	3	3	-	94241
94444	Land Reclamation	3	2	-	94241
94455	Apiculture	3	2	3	24102
94461	Applications of Computer in Plant Production	2	1	3	4th year Level
96241	Agricultural Extension	3	3	-	96211
96331	Farm Management	3	3	-	96211

Field Training: (10 credit hours start after completion of 100 credit hours)

Course #	Course title	Credit hours	Hours per week
94497	Field Training in Plant Production	2	6
94498	Field Training in Plant & Animal Protection	2	6
94499	Field Training in Soil, Irrigation & Machinery	2	6
95499	Field Training in Animal Production	2	6
96499	Field Training in Agriculture Economics and Rural Development	2	6

Course descriptions

PLA 94231 Insects and Plant Protection

This course is a study of insects in terms of their morphology, internal anatomy and biology, external form, functions and body extras as well as their changes to suit their environment. The course also looks at insect order and behavior, their types and environmental factors influencing their numbers as well as their classification. The course also is a study of causes of diseases such as bacteria, fungi, and viruses and the manner in which these microorganisms cause diseases and how they are linked with different environmental and weather factors. The course ends with an examination of ways of fighting these harmful insects by using chemical pesticides and other ways, in addition to damages resulting from insects and their control.

PLA94241 Principles of Soil and Irrigation

This course covers a number of topics: definition of soil, its types and composition, its important relationship with agriculture, its physical, chemical and mineral properties, underground water, soil conservation, plant nutrition, and nutrients, organic material, soil microorganisms, land partition, principles of soil-water and plant relationship, soil moisture and its measurement, evaporation, precipitation, water flow into pipes and canals. The course ends with a look at measurement of surface, drip and sprinkler irrigations systems.

PLA94345 Agricultural Machinery (Field)

This course covers types of agricultural machines and equipment, their structure and importance, and how they work theoretically. Other topics covered include hydraulics, power transfer, economic performance of machines with emphasis on agricultural tractors. The course also introduces agricultural implements used for soil preparation, farming, harvesting, protection, fertilization, threshing, spraying and water pumping. Students will also learn how to select equipment and machines to be used on a farm, fuel, air, electricity and transport systems. The course ends with an introduction to mechanical problems of agricultural tractors and their maintenance.

PLA94317 Principles of Forestry

This course highlights the economic and environmental significance of trees, objectives and methods of afforestation, afforestation ecology environmental factors and their influence on forest growth, development, and expansion. The course also looks at forest nurseries, afforestation methods, forest measurement, and ways of protecting forests from pests and diseases.

PLA94313 Field Crop Production

This course covers the following topics: history and development of field crops in the world, growing important crops such as legumes, wheat, barley, yellow maize and white millet, and oats, growing other crops such as beans, lentils, chickpeas and soya beans; areas of production, environmental needs, nutritional value, methods of upgrading productivity/efficiency under rainfall and irrigated conditions.

PLA94321 Plant Physiology

This course deals with the soil-plant relationship in terms of the diffusion process, osmosis potential, water absorption, water translocation processes, metabolism processes, photosynthesis in terms of its mechanism and occurrence, nutrient absorption, plant hormones (phytohormone), growth, nutrient transfer, plant growth regulating substances, dormancy and germination.

PLA94211 Vegetable Production

This course examines vegetables in terms of their economic importance and nutritional value, plant taxonomy, appropriate environmental conditions, culture, agricultural operations pertinent to the produce, transport, storage, agricultural techniques and their times, under rainfall, irrigated and protected conditions.

PLA94332 Plant Pathology

This course includes the study of plant diseases (fungal, bacterial, viral...) and ways of their development and occurrence, and the relationship between the cause and effect as well as the influence of environmental factors on plants starting from their

growth up to storage and marketing. The course also looks at the cycle of disease incidence, ways of its resistance with special emphasis on some of the diseases that damage agricultural crops in the regions, in terms of symptoms, cycles, development and eventual control methods used against them.

PLA94343 Irrigation and Drainage Systems

Topics covered in this course include water flow in pipes and canals, irrigation systems and installations, measurement of irrigation water, surface water, sprinkle irrigation, drip irrigation, programming and management of irrigation systems, water quality and salinity, and the basics of agricultural drainage. Students also learn about soil-water relationship, ground water and water wells, agriculture and drainage.

PLA94442 Soil Fertility and Fertilizers

This course covers several topics: plant growth factors, plant nutrient elements and their relationship with productivity, fertilization of plants, methods of adding these elements and their availability in plants. These elements include nitrogen, phosphorus, potassium, calcium, magnesium and other trace elements. The course will also deal with organic fertilizers (manure) and their role in improving soil quality, fertility, and plant production.

PLA94319 Selected Topics

Students in this course read on plant production and protection, soil science and other related sciences not covered in other courses. All topics will be open for in-class discussion.

PLA94323 Plant Propagation and Nurseries

Students, in this course, are introduced to basic techniques and practical skills for propagation of fruit trees, ornamental plants and vegetables. These propagation methods include seedlings and vegetation of various types: pollination, inoculation, hatching and using different plant organs and parts in addition to tissue planting. The course also dwells on using agricultural installations such as green houses, and other different agricultural environments for propagation purposes.

PLA94318 Ornamental Plants and Gardening

This is a study of principles and methods used to construct and design gardens and green areas and lawns, taking care of trees and planting trees and shrubs to decorate gardens, creation of stone and water gardens. The course is also a study of flowers and other types of plants particularly production of plant seedlings, by propagated bulbs, nodules, tubers and seeds and corms.

PLA94315 Forage Crop Production

Topics dealt with, in this course, include economic importance and nutritional value of green forage crops, history of their development, plant description and environmental requirements, methods of production, ways of green crop storage, production of seeds and appropriate crops grown in arid areas and mechanization of forage production.

PLA94333 Economic Entomology

This course is a study of and identification of insects which cause economic damage to plants, animals, and man, including a description of insects and their life cycle, and type of damage-control measures.

PLA94462 Seminar in Plant Production and Protection

This course is an opportunity for the student to collect and analyze data about a particular subject related to his/her interest. This will train him/her to link information, in various fields, and put it in a scholarly fashion. In this seminar, each student is expected to make a presentation and discuss the topic of his/her choice.

PLA94314 Fruit Production

Students, in this course, receive instruction on skills necessary for fruit tree planting and production in terms of goals, site choice, suitable soil, choice of appropriate breeds, preparation of land for planting, systems or methods of planting and breeding, fruit blossom growth, maturity and picking, weeds resistance and frost. The course also emphasizes fruit trees planted in the region.

PLA94422 Plant Breeding and Improvement

The purpose of this course is to give students information about genetic principles pertinent to plant breeding and improvement, techniques and methods used in this field, ways and bases of breeding self-pollinated economic crops and cross-pollinated crops that raise production and check on diseases and at the same time improve quality. The course also deals with modern means of breeding and the most important problems facing plant breeders and possible solutions for these problems especially for pests and disease control.

PLA94497 Field Training in Plant Production

This practical course is an opportunity for the student to develop certain skills in plant production, apply all information received in the different fields of agriculture. Students will spend their training in the university farm and apply all skills acquired in agricultural processes, problem-solving. Students will also make visits to nearby farms for further training.

PLA94334 Agricultural Pesticides

Topics covered in this course are agricultural pests, different pesticides, ways of fighting and killing these pests chemically, the economic importance of pesticides, history of pesticides, their types, formulation, application techniques, registration of pesticides and registration laws, and problems arising from the use of agricultural pesticides.

PLA94414 Evergreen Fruit Tree Production

This course covers production of evergreen fruit trees in the region, importance of studying these trees, their adaptation, varieties (cultivars) and their suitability for the environment, flowers, fruits, types, appropriate breeds, garden management, selection of new types, water needs with emphasis on olive, citrus, and aliguate trees in particular. The course ends with a look at orchard management.

PLA94416 Protected Agriculture

This course covers a number of topics: importance and types of protected farming, greenhouses, wooden and plastic houses, plastic tunnels; design, components,

installations of these structures, agricultural processes and their effect on increasing agricultural produce, improving quality of the produce inside these houses by using high tech equipment under controlled temperature conditions.

PLA94455 Apiculture

This course introduces foundations and principles of honeybees, nature of bees, and implements used in bee-keeping. The course is also a study of bees in terms of morphology and anatomy, joints, places of feeding and collection, breeding of bee queens, honey extraction and handling, classification of bee cells, diseases and pests affecting honey bees.

PLA94444 Land Reclamation

This course is concerned with land and water resources in Palestine, classification of lands, areas, and importance of land suitable for reclamation. The course also deals with factors behind a drop in land productivity, sources of solvent salts in soil, saline soil, and ways of reclaiming it, sodium and alkaline soils and their reclamation, boron-rich soil and its reclamation and assessment of irrigation water use.

PLA94354 Biological Control

This course is a study of bio control agents of harmful insect diseases and noxious weeds attacking agricultural crops. These include antagonistic fungi, bacteria, viruses, and anti-insects. This is in addition to ways of their propagation and use on a large scale basis in fighting agricultural pests within specific fighting programs. The course looks also at the utilization of these factors as an alternative or a supplement to the use of agricultural pesticides. The course also introduces ways of applying biocontrol programs using bioagents such as IPM biocontrol agent.

PLA94498 Field Training in Plant Protection & Animal Health

Students, in this course, receive training on spraying processes of agricultural pesticides, their preparation, verification of weights. Students also learn about specific spray solutions and calibration of sprayers to be followed within a timetable, to fight diseases and insects attacking agricultural crops in greenhouses or in open fields as well as fruit trees on a farm. The students receive training on how to fight and prevent diseases among cows, sheep, and goats on the farm. To take this course, a student has to complete the prerequisite, completion of 100 credit hours and department approval.

PLA94499 Field Training in Soil, Irrigation & Machinery

Students, in this field course, receive training in processes of soil testing and its relationship with irrigation according to type of soil, water quantities necessary for irrigation, installation of irrigation networks, namely drip irrigation, maintenance, repair and appropriateness of these networks for particular agricultural crops. In addition, students are trained on how to use agricultural machinery such as tractors and their subordinate implements, especially in carrying out agricultural work. Students also learn tractor driving, installing and disassembling implements used by the agricultural tractor. (Prerequisite: completion of 100 credit hours and department approval)

PLA94461 Computer Applications on Plant Production

In this course, students are trained on the uses of computer programs to upgrade or raise the level of crop productivity. These uses include proper fertilization and irrigation, and following up of effective programs to increase production as well as enhance quality. This is in addition to the use of suitable computer programs pertaining to effective farm management.

PLA94424 Biotechnology

This course covers planting techniques and propagation of plant tissues in order to improve plant quality and crop production. These techniques include culture of meristematic tissues, callus, proplasts, embryos, cells,.....

FACULTY MEMBERS

Associate professors

Hassan Abu Qa'oud	Ph. D. in Tissues, University of Illinois at Urbana Champaign, Illinois, USA, 1989.
Niman Mizyed	Ph. D. in Water Resources Management, Colorado State University, Fort Collins, Col., USA, 1990.
Ya'koub Battah	Ph. D. in Bio-Resistance, University of Paris, Paris, France 1991.

Assistant professors

Firas Swalhah	Ph. D. in Ecology, University of Leeds, Leeds, UK, 1982.
Azzam Tubailah	Ph. D. in Crop Fields, New Mexico University, USA, 1985.
Mohammed Ajour	Ph. D. in Plant Protection, Gottingen University, Germany, 1977.

Instructors

Faisal Shreim	M. Sc. in Crops, University of Jordan, Amman, Jordan, 1994.
Mohammed T. Hanbali	M.Sc. in Plant Water Needs, American University in Beirut, Beirut, Lebanon, 1964
Ibraheem Abu Shqair	M.Sc. in Chemistry, An-Najah National University in Nablus, Palestine, 1998.

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

I. Admission requirements:

- A. Successful completion of 30 credit hours.
- B. Successful completion of the following College of Science courses:
General Biology 24101 and 24102
- C. Successful completion of at least 18 credit hours of the college requirements.
- D. Admission into the major depends on averages in Biology I 24101 and 24102 as well as on the averages in Poultry Production 95211 and Sheep and Goat Production 95212.

II. Requirements for a B.Sc. in Animal Production and Animal Health:

The department offers a single specialization in Animal Production and Health. To obtain a B.Sc. in this major, a student must successfully complete 142 credit hours. These include university, college and department compulsory and elective courses in addition to "free" courses.

IA. Compulsory courses (41 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
23233	Organic Chemistry	3	3	-	23102
24231	Genetics	3	2	3	24102
24321	Microbiology	3	3	2	24102
95321	Feeds and Felix	3	-	-	-
95321	Feeds and Feeding	3	3	-	95211
95322	Feeds and Feed Analysis	1	-	3	95321
95323	Poultry Nutrition	3	2	3	95321
95330	Animal Physiology	3	2	3	24102
95331	Biochemistry	2	2	3	95330
95350	Reproduction Physiology and Artificial Insemination	3	2	3	95212,95211
95400	Animal Health and Diseases	3	3	-	23233
95416	Metabolism	3	2	3	95321
95425	Ruminant Nutrtrion	3	3	-	95321,95400
95432	Animal and Environment	1	2	-	95331
95433	Progenies' Breeding and Improvement	3	3	-	96334,94251
95461	Computer Applications in Animal Production	3	3	1	95424
95462	Seminar in Animal Production	1	1	-	Dept. approval

IB. Elective courses (12 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
94455	Apiculture	3	2	3	24102
95315	Selected Topics	3	3	-	4th year
95340	Dairy Product Technology	3	2	3	92312
95341	Meat Technology	3	2	3	92212,92211
95415	Fish Production	2	2	-	24102
95434	Animal Behavior	2	2	-	4th year
95435	Animal Shelter	2	2	-	92211,92212
95436	Animal Farm Management	2	2	-	4th year
95451	Parasitology	3	2	3	92350
96241	Agricultural Extension	3	2	-	93211
96322	Agricultural Marketing	3	3	-	93211
96331	Farm Management	3	3	-	93211

IC. Field Training (10 credit hours): 100 hrs. of training distributed as follows:

Course #	Course title	Credit hours
94497	Field Training in Plant Production	2
94498	Field Training in Plant Protection and Animal Health	2
94499	Field Training in Soil, Irrigation and Machinery	2
95499	Field Training in Animal Production	2
96499	Field Training in Agricultural Economics and Rural Development	2

Course descriptions:

ANI95211 Poultry Production

This course begins with an introduction to the poultry industry in Palestine, progenies, methods of nutrition, breeding and production. Then the course moves to poultry digestive tract, reproduction systems, egg incubation, hatching layers and broilers, methods of feeding, raising, and marketing poultry products. The practical portion of the course includes practical applications: production stages, egg storage and marketing, poultry production and the establishment of poultry farms.

ANI95212 Sheep and Goat Breeding

This course begins with a comparison between new sheep and goat progenies and local ones. Then it moves to methods of breeding and production in natural grazing

areas and intensive soil, nutrition, reproduction, fattening. In its practical part, the course focuses on acquisition of basic skills in goat and sheep breeding.

ANI95313 Dairy Cattle Production

This course highlights the economic importance of milk and its products, original and dual-purpose dairy cattle, their characteristics, factors influencing production of milk, its composition, selection of breeds, manger troughs and their control. The course also dwells on creation, management and running of dairy cattle with emphasis on progenies of milk-producing cattle.

ANI95322 Feeds and Feed Analysis

Topics covered in this course include chemical analysis of feed materials and other ingredients to determine percentage of moisture, raw protein, fat, carbohydrates, ash, fibre, digestion coefficient and Van Soost methods of analysis.

ANI95323 Poultry Nutrition

This course is a study of digestion, absorption, and photosynthesis processes for all food ingredients and needs according to stages of growth, production and factors influencing them. The course also deals with the effects of nutritional deficiency of these elements. In addition, the course provides the students with a description of feed used in poultry nutrition, and preparation of low cost ready-made fodder. The course ends with a study of different nutrition systems.

ANI95330 Animal Physiology

This course is a study of animal cell physiology structure and homeostasis as an introduction to a comprehensive study of nervous, genetic, and endocrine systems. The course also covers nervous regulation and blood artery of these systems and physiological relationships among them.

ANI95350 Animal Health and Diseases

Students, in this course, learn about the states of health and disease in animals, and the influence of the environment; they are also given a survey of common diseases in the region, symptoms of disease, methods of diagnosis, treatment, prevention of bacterial, virus and parasite diseases affecting farm animals.

ANI95331 Reproduction Physiology and Artificial Insemination

This course is a study of the functions of farm animals' genital organs, collection, testing, refrigeration and freezing, methods and techniques of artificial impregnation in all farm animals.

ANI95414 Fish and Fish Farming

This course covers several topics: Importance of developing fish resources in Palestine, types and qualities of fish, basics of fish husbandry, management, nutrition, breeding, improvement & hatching. The course also examines qualities of water and their relationship with fish production, fishing and methods of storage.

ANI95315 Selected Topic

In this course, students will be introduced to advanced practical and selected materials in one branch of animal production, also dealt with in other courses.

ANI95425 Metabolism

This course covers a number of topics: synthesis of energy, fat and protein in animal body, direct and indirect estimation of animal energy values, techniques of their calculation, relationship between basic synthesis methods and synthesis in cells and tissues, the energy needs of different organs, inputs and outputs of metabolism processes of various nutritional elements in animal bodies.

ANI95433 Progenies' Breeding and Improvement

This course examines gene frequencies and animal progenies influencing it, external variation and its components, genetic signs of pregnant animals, ways of estimating frequency coefficient, genetic equalizer, selection and its techniques, genetic value and its estimations, different ways of mating, internal breeding, ways of its use, external breeding. The course ends with practical applications on techniques of genetic improvement.

ANI95451 Parasitology

Topics covered in this course include parasite classification and division, parasite relationship with nutrition, infectious parasitic diseases, symptoms of diseases, anatomy of these diseases, ways of treatment and prevention in addition to techniques of laboratory checkup.

ANI95462 Seminar in Animal Production

The aim of this course is to provide the student with an opportunity to collect data about a certain topic related to his/her study. This will train him/her to link information among a number of fields and put it in a practical context. In addition, the course will allow the student to make a presentation in front of an interested audience, hold a discussion, thus getting self-confidence.

ANI95463 Animal Shelter

As the title suggests, this course looks at farm animals' barns and sheds, their specifications, necessary installations for farm animals, necessary implements for breeding and managing farm animals in terms of mangers, drinking places, milking, sterilization and cutting machines.

ANI95432 Animals and their Environment

This course tackles the relationship of animals with the surrounding environment, influence of temperature and light, geographic location, elevation relative to sea level, on behavior of animals and their relationship with the environment, and environment-related diseases.

ANI95431 Animal Behavior

This is a survey of vital factors related to animal behavior, farm animals' behaviors, nutrition, housing and surrounding environment and its influence on farm animal production.

ANI95340 Dairy Processing Technology

This course covers several topics: chemical and physical properties of milk, milk collection, milk processing techniques (pasteurization, homogenization, separation of solid materials, and packaging). The course is also a study of dairy product processing: cheese, yoghurt and labana.

ANI95343 Meat Processing Technology

This course is a study of meat composition, ways of its classification and storage: refrigeration and freezing; processing of meat products, heat processing of meat and its products and influence of processing on meat quality.

ANI95321 Animal Feeds and Feeding

This course tackles chemical composition and types of feed, digestion and photosynthesis of ruminant animals, food rations, energy, protein, fiber, minerals and their importance, ways of feeding, preparation of feed mixtures and their evaluation methods.

ANI95464 Animal Farm Management

This course examines selected topics on establishment of animal farms, farm animal breeding systems: poultry, meat animals, dairy cattle, record-keeping, agricultural produce marketing.

ANI95400 Biochemistry

This course begins with an introduction to bio-compositions in cells. Then it moves on to energy synthesis in cells, metabolism of carbohydrates, fats, proteins, other nutritional elements in cells.

ANI95449 Field Training in Animal Production

This course provides the student with an opportunity to develop necessary skills for animal production. The student will also have the opportunity to put these skills into practice in the college farms (Prerequisite: completion of 100 hours and department approval).

ANI95416 Ruminant Nutrition

In this course, students learn about the ruminant digestive system, microbial fermentation of feed nutrient, metabolic pathways microben feed nutrients. Students are also introduced to metabolic bath microben and animal body. The course ends with a look at factors affecting digestion and utilization of different feed stuff, and digestive disorders related to nutrition.

FACULTY MEMBERS

Associate professors

Jamal Abu Omar Ph. D. in Ruminant Animal Feeding,
Colorado State University, Fort Collins, Col.,U.S.A.,
1990.

Assistant professors

Rateb Aref Ph. D. in Veterinary Medical Sciences,
University of Sarajevo, Bosnia, 1994.
Ma'en Samara Ph. D. in Non-Ruminant Animal Feeding,
University of Tennessee, USA. 1993.

Instructors

Baha' Abu Baker M.Sc. In Poultry Sciences,
University of Glasgow, UK, 1995.

**DEPARTMENT OF AGRICULTURAL ECONOMICS
AND RURAL DEVELOPMENT**

Admission requirements:

To be admitted into the Department of Agricultural Economics and Rural Development, a student must have finished 30 credit hours. He/she must have also successfully completed 18 credit hours of the college requirements prior to specialization. Further, the student must have completed Mathematics 21103 and General Biology I 23101. The student is then admitted on the basis of his/her cumulative average in the courses aforementioned and in Agricultural Economics 23101.

Requirements for a B.Sc. in Agricultural Economics and Rural Development:
A student must complete department compulsory courses (39 credit hours) and electives (14 credit hours).

IA. Compulsory courses from College of Science (26 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
21103	General Mathematics	3	3	-	-
22109	General Physics I	3	3	-	22109
22110	General Physics Lab. I	1	-	3	22109
23101	General Chemistry I	3	3	-	-
23107	General Chemistry Lab. I	1	-	3	23101
23102	General Chemistry II	3	3	-	23101
23108	General Chemistry Lab. II	1	-	3	23107
24101	General Biology I	3	3	-	-
24107	General Biology Lab. I	1	-	3	24101
24102	General Biology II	3	3	-	24101
24108	General Biology Lab. II	1	-	3	24102
27120	Introduction to Computer Science	3	3	-	21103

IB. Courses from College of Agriculture (30 credit hours)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
91211	Vegetable Production	3	2	3	24102
91212	Fruit Tree Production	3	2	3	24102
91231	Insects and Plant Protection	3	2	3	24102
91241	Principles of Soil and Irrigation	3	2	3	24102
92211	Poultry Production	3	2	3	24102
92212	Sheep and Goat Production	3	2	3	24102
92313	Dairy Cattle Production	2	2	-	24102
96211	Principles of Agricultural Economics	3	3	-	21103

96226	Agriculture in Palestine	2	2	-	96211
96334	Agricultural Statistics	3	2	-	96211
96425	Food Security	2	2	-	96211

IIA. Compulsory Courses (36 credit courses)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
96221	Agriculture and Macroeconomics	3	3	-	96211
96322	Agricultural Marketing	3	3	-	96211
96331	Principles of Farm Management	3	3	-	96211
96332	Agriculture Funding	3	3	-	96331
96333	Agricultural Accounting	3	3	-	96331
93335	Agricultural Project Evaluation	2	2	-	96332
96336	Agricultural Work Management	3	3	-	96331
96444	Rural Development	3	3	-	96241
96442	Agricultural and Economic Development	3	3	-	96211
96451	Computer Applications in Agricultural Economics	3	3	6	96312
96452	Seminar on Agricultural Economies and Rural Development	1	1	-	Senior students
96312	Agricultural Production Economics	3	3	-	96331
96241	Agricultural Extension Services	3	3	-	96211

IIB. Electives (Student may choose 14 credits)

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	
94354	Bioresistance	3	3	-	96241
94414	Evergreen Tree Production	3	3	-	96211
94416	Protected Agriculture	3	3	-	96334
95321	Animal Feeds and Feeding	3	3	-	96241
95350	Animal Health and Diseases	3	3	-	96241
96242	Agricultural Education	3	3	-	96312
96243	Rural Sociology	3	3	-	96211
96315	Agricultural Econometrics	3	3	-	96331
96346	Agricultural Systems Analysis	2	2	-	96241
96347	Introduction to Environmental Economics	3	3	-	96211
96413	Agricultural Price Analysis	3	2	-	94231

96414	Agricultural Economic Analysis	3	2	3	94212
96416	Linear Programming in Agriculture	2	2	-	94211
96423	Agricultural Cooperatives	3	3	-	95211
96424	Land Economics	3	3	-	95211

IIC. Field Training (10 credit hours)

-Field Training may only be taken after the completion of 100 credit hours.

Course #	Course title	Credit hours
94497	Field Training in Plant Production	2
94498	Field Training in Plant Protection	2
94499	Field Training in Soil, Irrigation and Machinery	2
95499	Field Training in Animal Production	2
96499	Field Training in Agricultural Economics and Rural Development	2
	Total	10

Course descriptions

AGE96211 Agricultural Economics

In this course, students are introduced to economic principles which include the relationships among production inputs and the relationship between inputs and outputs. The course also introduces productivity, production laws, costs, status of agriculture in the economic statement and qualities characterizing work in agriculture. The course ends with a look at various branches of agricultural economics with emphasis on agricultural policies adopted by some Arab countries.

AGE96221 Agriculture and Macroeconomics

Topics covered in this course include agricultural economics, national income accounts, income determination, government and income determination, consumption, investment & market products, cash supply, demand for cash, monetary markets, demand and total supply, monetary and financial policies, inflation, unemployment, economic growth in agriculture, agricultural produce, foreign trade, and income policies.

AGE96226 Agriculture in Palestine

This course traces the development and importance of agriculture at international, Arab and local levels. The course covers agricultural climate, production elements, plant production in irrigated and rainfall areas. In addition, the course looks at animal production, market product, agricultural mechanization, agricultural institutions, agricultural problems in the region, modern and developed agricultural projects.

AGE96241 Agricultural Extension Services

This course is a study of the development and origin of agricultural extension, its goals, and philosophy affecting its effectiveness. The student will be provided with information that helps him/her in the preparation of extension service programs and their evaluation. The course also looks at the history of agricultural extension in the West Bank and Gaza Strip, its goals, functions, present state, and ways of increasing its effectiveness.

AGE96242 Agricultural Education

Students, in this course, are introduced to the concept of training on agricultural education, adult education, acquired agricultural educational skills, ways of teaching agricultural skills, and audio-visual aids used in agricultural education.

AGE96243 Rural Sociology

This course covers sociology, significance of social studies in agricultural development, social organizations and systems, factors influencing social life, rural sociology, characteristics of rural society, Palestinian rural society, its characteristics, social organizations, and social institutions existing in Palestinian society.

AGE96312 Agricultural Production Economics

Topics covered in this course include production and cost, their utilization in determining quantities of optimum production elements, amount of productive economic efficiency, volume economies, and demand for production elements.

AGE96315 Agricultural Econometrics

This course covers several topics: descriptive statistics for classified and unclassified data, parametric and non-parametric statistical tests, matrices, mathematical processes pertinent to them, simple and multiple linear regression analysis, and their relevant tests.

AGE96322 Agricultural Marketing

This course introduces activities related to transfer of commodity property from producer to consumer. In this context, students are introduced to all efforts devoted to transfer, storage and packaging of agricultural produce. Students are also introduced to other marketing services, in terms of funding, selling and purchasing, agricultural markets in the West Bank and Gaza Strip, and the intermediaries. The course ends with light shed on marketing costs, marketing efficiency, and final agricultural marketing purposes.

AGE96331 Principles of Farm Management

This course is an investigation into the role and functions of agricultural management and decision-taking processes, economic bases, planning methods, financial, technical control and execution, soliciting and managing resources, and management of uncertainty risks.

AGE96332 Agricultural Funding

In this course, students learn about concepts of agricultural funding, sources of loans, required guarantees and their control, farm financial management, investment evaluation, loans and interest rates.

AGE96333 Agricultural Accounting

This course introduces concepts of agricultural accounting, accounting systems, basic theories and their relationship with decision-making.

AGE96334 Agricultural Statistics

Students in this course learn about methods of data description, organization, in graphic and numerical forms. They are also introduced to vertical base, dispersion scales, probability theories, random variables, probability distributions, natural distribution, statistical significance of large and small samples. In addition, students are also taught the main methods of research, utilization of statistics for analysis of data and agricultural phenomena. The course ends with a study of straight-line, coefficient analyses, record figures, series and trends, taking of samples and hypothesis testing.

AGE96336 Agricultural Business Management

This course emphasizes concepts, fields, role, and function of agricultural business management, system links and agricultural business administration among bodies and specialties, important and contemporary issues in agricultural business management (funding, marketing, farm management, decision-making, leadership, institutional behavior, agricultural policy, bureaucracy, centralization, and decentralization.

AGE96346 Agricultural Systems Analysis

This course begins with the systems theory in terms of origin, concepts, types, goals, input and output components of transformation process, feedback, systems analysis and its methods, graph theories, network theory, simulation theories, initial planning method, program evaluation methods, critical path, queuing theory, systems theory and its relationship with some sciences. The course also dwells on agricultural systems and their relationship with agricultural development, research, and extension, transfer of hi-tech, and know-how, horizontal and vertical integration, agricultural systems in Palestine, survey methods pertaining to their determination.

AGE96347 Introduction to Environmental Economies

Topics covered in this course include elements of the environment, environmental system, aspects of environmental pollution, sources of pollution, environmental protection and its methods, effect of agricultural farming on environmental balance, and environmental economics.

AGE96413 Agricultural Price Analysis

This course dwells on the role of prices in the economic system, foundations of price analysis, supply of and demand for agricultural produce, flexibilities, price balance, pricing and employment of resources, market prices, record figures of prices, time series analysis, and pricing institutions.

AGE96414 Agricultural Economic Analysis

This course introduces terms and definitions, concepts and instruments of analysis, derivatives, multi-variable functions, Lagrange coefficient, logarithms, matrices, determinants, shadow prices, optimal methods, economic applications, matrix, steady-state, Kreimer law.

AGE96416 Linear Programming in Agriculture

This course examines components of linear programming model (productive efficiency and minimum efficient size), hypotheses, agricultural activities, technical documents, graph method, Simplex method, basic solutions, binary solution, shadow prices, sensitivity analysis for good significance and determinants, computerized linear programming applications in different agricultural activities.

AGE96423 Agricultural Cooperatives

Students in this course are introduced to trends and schools pertinent to the cooperative movement in the world. The course will examine its organizational and administrative structures; the course highlights the experience of some Arab and foreign countries in this field. The course also includes main concepts of cooperation, cooperative agricultural credits, and cooperative marketing. The course ends with a study of the cooperative movement in Jordan and Palestine.

AGE96424 Land Economies

This course mainly examines land-economic problems as they are a rare production element, different uses of land and its development, methods used and followed in renting land, and maintenance of land resources.

AGE96425 Food Security

This course covers a number of topics: strategic elements of food security, food security approaches, food security and policies and their tools, fully integrated food plans, population reproduction laws, food budget, green revolution and food security, food assistance, basics of self-reliance, food security from an international perspective, Arab and Palestinian food security, food and poverty, international experiences, economic inflation and nutrition.

AGE96442 Agricultural and Economic Development

This course is an investigation of the role of agriculture in economic development, foundations of economic and agricultural development, characteristics of economic underdevelopment, obstacles to agricultural economic development, funding of development and its sources, economic development theories, economic development models, development in Palestine, role of Arab agricultural integration in economic development.

AGE96444 Rural Development

Topics covered in this course are economic development, development strategies, development planning, rural development, rural integrated development, problems of rural development, and past experiences.

AGE 96451 Computer Applications in Agricultural Economies

This course begins with an introduction about the computer, software, Excel program and its uses, computer use in quantitative analysis on agricultural economics and its branches, graphics, reconfigures, statistical measurements, regression analysis, and financial and economic analysis.

AGE96452 Seminar on Agricultural Economics & Rural Development

This course trains students on data collection about a specific topic, in their field of specialization, from different sources. They are also expected to write and report their findings in front of an interested audience.

AGE96499 Field Training in Agricultural Economies and Rural Development

Students receive field training in farm management, evaluation of agricultural projects, agricultural work management, agricultural marketing, agricultural statistics, production economies, econometrics, linear programming, agricultural extension, rural development, agricultural funding, cooperatives, price analysis tools of analyzing agricultural economic phenomenon.

FACULTY MEMBERS

Instructors

Isma'il Abu Safiya

M.Sc. in Agricultural Marketing and Extension
Services, Ein Shams University, Cairo, Egypt, 1978.

COLLEGE OF SHARI'A

Establishment

When Najah was established in 1977, it had a department of Islamic education. It was actually a support department offering university service courses as well as other courses to specific departments. Of these, the department offered Islamic Education and Islamic System, as university requirements, and Methodology of Hadith Criticism (Mustalah alHadith), and Exegesists' Methodologies, to Arabic majors.

On Oct. 30, 1980, the University's Board of Trustees took a decision to establish a full-fledged department: Department of Islamic Studies. The department offered a single specialization in Islamic studies. It was one of the College of Arts departments. The department continued to develop and in 1985, it offered a graduate program in Fiqh and Tashri' (Science of Islamic Laws and Islamic Legislation). The first group consisted of 19 men and women students. The department had taken upon its shoulders to spread Islamic knowledge, particularly 'aqida and shari'a, and Islamic morals as a way of life. The department educated a considerable number of Najah graduates, charged them with the carrying of the message of Islam by preaching and setting good examples.

In 1991, the department became a Shari'a College. At present this college has two academic programs, one leading to a B.A. degree and another leading to an M.A. in two specializations : Fiqh and Tashri', and Usul e-Deen.(fundamentals of Islam)

Undergraduate Program

The College of Shari'a has curriculum plans leading to a B.A. degree in two specializations: Fiqh and Tashri', and Usul e-Deen. The first is marked 1 and the second is marked 2.

Soon after joining the College of Shari'a, students, in the first semester, take general courses offered by the college. These courses, making 23 credits, are distributed as follows:

Course #	Course title	Credit hours	Remarks
41111	Fiqh of Ibadat I	3	-
41112	Introduction to Fiqh I	3	-
41114	Usul al-Fiqh I	3	-
42111	Sciences of the Holy Qur'an	3	Exegesis
42112	Sciences of the Hadith	3	Hadith
42113	Islamic 'Aqida I	3	'Aqida
42114	Syntax I	3	-
42117	Recitation and Memorization of Qur'an I	2	-

Course descriptions

SHA41111 Fiqh of Ibadat I

This course covers a number of topics: definition of fiqh, purity, ablution, washing of body, water, filth, menstruation, prayers, their rules & wisdom, times and call for prayers, prayer conditions, pillars, and manners. The course also dwells on travelers' prayer services, Friday prayer services, feast prayers, patient's prayers, prayer for rain, prayer for fear, prayer for funeral, and martyr's rules.

SHA41112 Introduction to Fiqh I

This course begins with an introduction to purposes or aims of Islamic shari'a overall fundamentals, fiqh sub-issues, civil rights and their relationship with fiqh, standardization of Islamic fiqh, role of *Al-Ahkam* journal and *Islamic Fiqh Encyclopedia*. The course also introduces pillars of Islamic fiqh, basic principles in shari'a, public and private rights, roles fiqh has played, sources of dependence in Islam, custom, contract and property theory in Islamic shari' a.

SHA41114 Usul al-Fiqh I

This course first introduces science of fiqh fundamentals, its subjects, history, differences between fundamentals and fiqh rules, the hows of writing on fiqh fundamentals, disagreement on evidence: prohibition of evasive legal devices, customs, public interest, and application of discretion in a legal decision (istihsan).

SHA42111 Sciences of the Holy Qur'an

This course covers a number of topics: definition of Holy Qur'an, differences between Medanite and Meccan discourses, inspiration of and revelation of Holy Qur'an in stages, occasions of its revelation, compilation of Holy Qur'an and its writing , revelation of the Holy Qur'an in seven alphabets, the seven readings, repeal, Qur'an as a miracle, exegesis and interpretation, levels of exegesists.

SHA42112 Sciences of the Hadith

Topics covered in this course include definition of sunna, its importance, and its proof, its explanation of the Holy Qur'an, definitions of Hadith sciences, transference, its quotation and attribution, origin of Hadith science, Hadith endurance and performance, ways of endurance, narration of hadith by paraphrasing, reliability and unreliability, levels of reliability, and unreliability, which governed people's narrations, news of repentants from lasciviousness, hadith chain of narration, infamous Hadith, true, good and weak hadiths, their divisions, the Prophet's companions and post companions.

SHA42113 Islamic 'Aqida I

This course begins with the meaning of Islamic 'aqida, its traits, effects of its presence or absence in the individual or group. Then it proceeds to show the Holy Qur'an's way of building it among the first generation. The course also highlights verses referring to existence of Allah Subbanahu, barriers or obstacles standing in the way of belief or

conviction, human beings' position towards it, meaning of oneness and its types, requirements and reversals.

SHA42114 Syntax I

This course covers the following topics (1) grammatical terms such as noun, verb, alphabet, morpheme, structure, subject, predicate, "kana" and its sisters, "inna" and its sisters (2) morphological balance, emphasis, attribution and all derivatives (3) application and this includes comprehensive application of Arabic syntax issues extracted from the Holy Qur'an.

SHA42117 Recitation and Memorization of Qur'an

In this course, students are expected to memorize chapter 30 of the Holy Qur'an, study meanings of difficult words, good manners of recitation, virtue of recitation, levels of recitation, familiarity with the ten readings; meaning of "tajwid" linguistically and technically, its rule, wisdom, rule governing the touching of Holy Qur'an by those lacking ritual purity, "isti'atha" (seeking protection from Allah) al-Basmalah (in the Name of Allah), rules governing "silent noon" and "tanween", rules governing silent "meen", "istila" phonemes, rules governing "ra" and "qalqala". There will be practical training on these rules from Al-Kahf to An-Nas suras in the Holy Qur'an.

DEPARTMENT OF FIQH AND TASHRI'

Admission requirements

Students wishing to join this department must complete the following courses:

1. Fiqh of Ibadat 41112.
2. Introduction to Fiqh 41123.
3. Usul al-Fiqh 41114

A minimum of 70% must be obtained in each of the courses in question.

I. Undergraduate requirements for a Bachelor's degree in Fiqh and Tashri'

All students wishing to obtain a B.A. degree in Fiqh and Tashri' must complete 137 credit hours. These courses include university, college and department compulsory and elective courses as well as "free" courses.

IA. Compulsory courses (65 credit hours)

Course #	Course title	Credit hours	Prerequisite
41221	Fiqh of Ibadat II	3	-
41227	Fiqh of Mu'amalat I (transactions)	3	41112
41223	Personal Status Fiqh I	3	-
41224	Usul al-Fiqh II	3	41114
42211	Exegesis I	3	-
42212	Hadith I	3	-
42218	Syntax II	3	-
42217	Recitation and Memorization II	3	42115
41422	Fiqh of Mu'amalat II (transactions)	3	41112
41328	Fiqh of Ibadat III	3	-
41323	Personal Status Fiqh II	3	-
41424	Fundamentals of Fiqh III	3	41114
41331	Jihad and Biography Fiqh	3	-
41326	Iman and Vow Fiqh	3	-
41327	Fiqh of Penalty I	3	-
41421	Fiqh of Qada' and Fiqh of Evidence	3	-
41431	Fiqh of Mu'amalat III	3	-
41423	Inheritance	3	-
41425	Comparative Fiqh	3	-
41426	Fiqh Bases	3	-
41427	Exegesis of Clear Verses	3	-
41429	Fundamentals of Fiqh IV	3	41114

IB. Elective courses (21 credits)

Course #	Course title	Credit hours	Prerequisite
41252	Introduction to Fiqh II	3	-
41257	International Relations	3	-
41256	General Principles of Islamic Government System	3	-
42215	'Aqida II	3	-
41315	Islamic Economics	3	-
41366	Contemporary Ideological Trends	3	-
42216	Takhrij Fundamentals and Investigation	3	-
41355	Methods of Teaching Religion	3	-
41451	Precise Hadiths	3	-
42412	Fiqh of Kitab and Sunna	3	-
41453	Wills and Wakf (endowment)	3	-
41454	Textual Study of Fiqh Books	3	-

Course descriptions

FITA41221 Fiqh of Ibadat II

Topics covered in this course include zakat fiqh in terms of definition and rule, evidence of its legitimacy, criteria for its obligation, zakat (alms) on financial resources and ways of its distribution; fiqh of fasting in terms of definition, legality, conditions, pillars, types, make up, its void, and religious expiation.

FITA41223 Personal Status Fiqh I

This course covers marriage contract, in terms of legality, wisdom and definition; engagement, introductions to marriage contracts, legal conditions for their completion, conditions associated with contract, guardianship, power of attorney, marriage rights, children's and parents' rights, effects of marriage contract, dowry, alimony, fair treatment of wife/wives, loyalty and decision making at home, legal housing.

FITA41224 Usul al-Fiqh II

This course covers legal judgment, linguistically and technically, common judgment and capacity judgment and the differences between them; role of mind in knowing judgment and scholars' opinions concerning it. The course covers its types and divisions, the capacity judgment, according to al-jumhour, and al-Ahnaf, in terms of its types and subtypes, divisions, ijihad -individual interpretation (derivation of laws from the legitimate sources), imitations and copying.

FITA41227 Fiqh of Mu'amalat I(transactions)

Students, in this course, will learn about financial behaviors in the field of selling , al-hijr, sulh (reconciliation), companies, transfers, and power of attorney.

FITA42211 Exegesis I

Students will study first chapter of Al-Baqra sura in terms of its credit, the reason for the medianite Qur'an's tackling of Islamic legislative issues. The course also focuses on some legislative prescriptions such as magic, a-naskh (revocation), Jewish Muslim ties, and other issues dealt with in the verses. Students are expected to write papers related to exegesis of verses in the chapter in question.

FITA42212 Hadith I

In this course students will study 30 hadiths selected from *Subol Al-Islam*. These hadiths will be taken from the following chapters: Beginning of Al-Wahy (verbatim revelation of verses); Al-Ilm (knowledge); Al-Tahara (Purity); Al-Jihad (Holy war); Al-Imara (Leadership); Al-Libas (dressing code); Al-Zeena (ornamentation and beautification); al-Ru'ya (vision), a-Salam (peace); a-Sawm (fasting); Zakat (obligatory sharing of wealth with the poor : 2.5%); al-Hajj (fifth pillar of Islam-pilgrimage to Mecca); Salat (act of worshipping Allah).

FITA42217 Recitation and Memorization II

In this course, students will memorize chapter 29 of the Holy Qur'an and this includes knowing meanings of words, extension of vowels and consonants, types of extension, places of articulation, phonemes and their properties, assimilation, lam al-shamsiyah and lam al-qamariyah, hamzat al-wasl and hamzat al-qat', initial vowels and median and final vowels, stops and their symbols. Students will practice these rules from al-Fatiha sura to the beginning of the Al-Kahf sura.

FITA42218 Syntax II

This course covers the following areas of syntax: free object, syntactic inclusion, direct object, accusative of specification, state, and indirect objects. Texts will be used to cover all these areas.

FITA41323 Personal Status Fiqh II

This course covers talaq (divorce) and its types, al-khula (divorce initiated by wife after paying a compensation), rules of khula, custody, and its rules, kinship maintenance or alimony.

FITA41328 Fiqh of Ibadat III

In this course students learn about Hajj and Sawm rules.

FITA41331 Jihad and Biography Fiqh

This course covers a number of topics: definition of jihad, difference between war and jihad, purposes of jihad philosophy in Islam, suspicions about jihad, place of jihad in the Islamic da'wa, fields of jihad, international relations in Islam, times of war in Islam, effects of war on Islam.

FITA41326 Belief and Vow Fiqh

This course deals with the true nature of iman, its divisions and rules, oath pillar and its

conditions and things that belong to creator and creatures; how to swear, kinds of iman and atonement, vows, its conditions and pillars as well as various rules, details and applications.

FITA41327 Fiqh of Penalty I

This course provides definition of penalties, their kinds, estimated and unestimated, differences among them, penalty, execution authority, types of punishments : apostasy, drinking, adultery, robbery, slander or false accusation of unchastity, stealing and prostitution.

FITA41421 Fiqh of Qada' and Fiqh of Evidence

This course introduces definition of judiciary fiqh, judiciary and its evidence, conditions required in judiciary, good people's avoiding of it, judiciary during Prophet's and Caliphs' eras, place and time specialization for judiciary, women and judiciary position, ways of fielding evidence in Islam, agreement and disagreement upon them, committing judges to follow a certain school. The course also introduces lawsuits, fundamentals of defense proceedings in Islamic shari'a code of rules, Islamic judiciary system, formal judiciary system, differences between them, and judiciary system in modern times.

FITA41422 Fiqh of Mu'amalat II (transactions)

Students in this course learn about financial performances in Islamic fiqh in the fields of mudaraba, murbaha, ijara, musaqat, collaterals, gifts and reclamation of "dead land".

FITA41424 Fundamentals of Fiqh III

This course covers areas and divisions of pronunciation, rhetoric in terms of definition, divisions and scholars' opinions about its permission; conflicts and outweighing in terms of their meanings and the scholar's methodology in removing contradictions from texts.

FITA41431 Fiqh of Mu'amalat III

Students learn about the following: power of attorney, warranty (guarantees) transfers and companies.

FITA41423 Inheritance

This course deals with inheritance, rights pertaining to it, reasons for and conditions of inheritance, dividers of inheritance, reduction of heirs' shares, distribution of remaining shares, blood relationship inheritance, abolishment, inheritance by estimation, obligatory will, transitional inheritance.

FITA41429 Fundamentals of Fiqh IV

This course tackles morphemes, both clear and vague, and analogy in terms of definition, pillars, origin, branches, evidence, ways of causes and the field of qiyas (analogy).

FITA41425 Comparative Fiqh

This course begins with a brief explanation of the reasons for Fiqh scholars' disagreements. Then the course moves to ijihad (derivation of laws from legislative sources) in terms of definition, conditions for ijihad scholars; instructors will choose one

issue in Islamic fiqh: Ibadat, mu'amalat, felony, marriage, separation between a married couple

FITA41427 Exegesis of Clear Verses

This course includes a comprehensive interpretation of Holy Qur'anic verses, mainly at the linguistic and meaning levels. The course will focus on giving detailed explanations of divine specific and prepared prescriptions. Verses are the following:

I Al-Baqara Sura : verses 226-227, Focus: Al-Ila issue

II Al-Baqara Sura: Prescriptions cited in verses 233-235.

III An-Nisa' Sura: Mistaken and deliberate killing : 92-93.

IV An-Noor Sura : Slander and sworn allegation of adultery committed by husband or wife: verses 4-10.

FITA41252 Introduction to Fiqh II

This course covers a number of topics : characteristics of Islamic legislation in mu'amalat, public interests, principles of Islam, emergence of legislative evidence theory, definition of this evidence and its division into criminal and civil. These also have their own branches. The course also defines crime, penalty, corruption, void, qualification or capacity, jurisdiction, expansion of investigation of custom (mores) theory and rules, rules of changing rules due to changing times and refutation of arguments considering it trivial.

FITA41257 International Relations

This course covers several issues: concept of international relations, difference between international relations and international law, their sources in Islam, international relations during times of peace, Muslims' subjects (Christians and Jews), safety, Muslim country, and enemy country, international relations during war times, jihad, captives, arbitration, effects of war, treaties in Islam, their types, and their conditions, ways and stages of concluding them, termination and breaching treaties.

FITA41256 General Principles of Islamic Government System

Topics covered in this course include caliph, consultancy, foundations of ruling system, election or fealty, divisions of cabinet in Islam, deposing the caliph, conditions caliph should meet, caliph's responsibilities and term of rule.

FITA42215 'Aqida II

This course dwells on a number of topics: belief in prophets and messengers, proving prophethood phenomenon, the need for it, wahy (revelation of verses) and its manner, miracle and its definition, evidence of brotherhood credibility, messengers' miracles and the Prophet Mohommed's miracle, prophets' inviolability or infallibility, refuting violators' suspicions, belief in the day of judgment and angels and their importance.

FITA41351 Fiqh of Penalty I

This course covers al-qisas (punishment) both retributive and compensatory for homicide and injury to human, penalty against infant injury, indemnity for bodily injury (diya), evidence to prove crime, al-ta'azir (discretionary) punishments depending on

offences.

FITA41315 Islamic Economics

This course begins with the history of this science in Islam; it also highlights Muslim economists' practical application of economic principles in the Prophethood and Guided Caliphs' eras. The course also examines Islamic economy in terms of state resources and expenditure, role of cash in Islamic economy, Islamic banking system and investing money through them; the state's interference in the economic course (prices and monopoly), role of Islamic system in Islamic economy (hisbah), fall of communism which reinforced principles of Islamic economics, capitalism and Islamic economy, inflation (world chronic economic problem) and Islam's role in solving it.

FITA41331 Prophetic Biography

The course begins with introduction to the study of Prophet's biography in terms of its benefit, characteristics, sources. Then the course moves to an analytical study of events of prophet's biography starting from the birth to death of Prophet Mohammed.

FITA41366 Contemporary Ideological Trends

This course examines general characteristics of contemporary ideological doctrines, philosophical formation of ideologies, their historical development up to the end of the 20th century. The course will mainly examine Marxism, nationalism, capitalism, pragmatism, existentialism. The course will seek to refute the philosophies of these ideologies.

FITA42216 Takhrij Fundamentals

This course examines the science that investigates the reports of hadith, purpose of investigation, its benefits, books published on this science, ways of investigation, how to make use of it, most important books investigating hadith authenticity; other books of hadiths describing specific things. These are the precise, virtue hadiths etc ... The course also dwells on narrators' biography books and how to benefit from them, how a hadith was compiled from different reporters, how to draw tree of reporters narrating hadiths by arranging them; revision of things pertinent to investigation of hadith sciences, how to judge a certain hadith, how to search for hadith witnesses, how to read narrators' biographies, judging hadith, and investigating its reporters, editing manuscripts and other relevant texts, methodology of hadith criticism.

FITA41355 Methods of Teaching Religion

In this course, students are taught how to teach Islamic subjects : The Holy Qur'an, exegesis of the Holy Qur'an, Prophetic hadiths, beliefs, Prophetic biography, morals, life-styles according to fiqh.

FITA41451 Precise Hadiths

This course is a study of precise hadiths, specific punishment hadiths, blood hadiths, personal status hadiths and judiciary hadiths. The course will focus primarily on fiqh rules pertinent to these subjects. Textbook used is *Nayel Al-Awtar* by al-Shawkani.

FITA42412 Fiqh of Kitab and Sunna

This course begins with a definition of fiqh and sunna and the relationship between sunna and al-Kitab. The course also studies fiqh social rules referred to in An-Noor sura. These include adultery, accusation of unchastity, etiquette of visits, marriage encouragement, some fiqh rules pertinent to separation between the couple in the light of al-kitab and sunna, namely divorce, its legitimacy, reason, types, divorce initiated by wife after paying compensation(Khul'), and injurious assimilation of wife to mother.

FITA41453 Wills and Wakf (Endowment)

As the title indicates, this course covers wills, rationale behind them, ruling, definition, pillars, conditions, void, retraction, acceptance, turning them down, their legatee (heir) and executor's types of wills. In the second part of the course, students will be introduced to wakf (endowment) in terms of definition, types, conditions, its void, substitutions and wakf and its reasons.

FITA41454 Textual Study of Fiqh Books

This course is an analytical study of specific texts culled from Islamic fiqh books.

FACULTY MEMBERS

Associate Professors:

Abdel-Mun'im Abu Qahouq

Ph.D. in Islamic Legal Policy,
Al-Azhar University, Cairo, Egypt, 1976.

Marwan Al-Qaddoumi

Ph.D. in Islamic Legal Policy,
Al-Imam Mohammed University, Saudi Arabia,
1985.

Saleh Al-Shareef

Ph.D. in Islamic Legal Policy,
Al-Azhar University, Cairo, Egypt, 1988.

Assistant Professors:

Mohammed Ali Seleibi

Ph.D. in Islamic Legal Policy,
Al-Azhar University, Cairo, Egypt, 1988.

Ma'moun al-Rifa'I

Ph. D. in Comparative Fiqh,
Al-Qur'an Al-Karim University, Sudan, 1990.

Jamal Zeid Al-Kilani

Ph.D. in Comparative Fiqh,
Al-Qur'an Al-Karim University, Sudan, 1994.

Nasser e-Deen a-Sha'er

Ph. D. in Comparative Religions,
University of Manchester, UK, 1995.

Ali Al-Sartawi

Ph. D. in Fundamentals of Fiqh,
University of Jordan, Amman, 1997.

Hassan Khader

Ph. D. in Fundamentals of Fiqh,
Al-Qur'an al-Karim University, Sudan, 1998.

Jamal Hashash

Ph.D. in Comparative Fiqh,
Al-Qur'an Al-Karim University, Sudan, 1999.

Instructors:
Ala' Maqboul

M.A. in Comparative Fiqh,
Umm-Durman University, Sudan, 1996.

DEPARTMENT OF USUL E-DEEN

Admission requirements:

Students wishing to join the Department of Usul e-Deen must complete successfully the following courses : Qur'anic Sciences 42111, Hadith Sciences 42112 and Aqida 42113. A minimum of 70% must be obtained in each of the three courses.

I. Requirements for a B.A. in Usul e-Deen

To obtain a B.A. degree from the Department of Usul e-Deen, students must successfully complete 137 credit hours. These include university, college, and department compulsory, elective courses and "free" courses carrying six credits.

IA. Department compulsory courses (65 credits)

Course #	Course title	Credit hours	Prerequisite
42211	Exegesis I	3	42111
42212	Hadith I	3	42112
42213	Exegesis II	3	42111
42214	Hadith II	3	42216
42215	Aqida II	3	42113
42216	Fundamentals of Takhrij	3	42112
42217	Recitation and Memorization	3	42117
42218	Syntax II	3	-
42311	Exegesis III	3	42111
42312	Hadith III	3	42216
42313	'Aqida III	3	42113
42314	Methods of Da'wa (call)	3	-
42315	Prophetic Biography	3	-
42316	Qur'anic Qasas (stories)	3	-
42411	I'jaz al-Qur'an	3	-
42412	Fiqh of Kitab and Sunna	3	-
42413	Comparative Religions	3	-
42414	Islamic Sects	3	-
41212	Ibadat II	3	-
41224	Fundamentals of Fiqh II	3	-
41328	Ibadat III	3	-
41423	Inheritance	3	-
-	Memorization of Chapters 1,2,27,28 of Holy Qur'an	3	-

Elective Courses (21 credits)

Students have to take 21 credits from this section. They have to select at least three courses from each of the following two lists:

A. Three courses (9 credits)

Course #	Course title	Credit hours	Prerequisite
42461	Exegesis IV	3	42111
42462	Exegesists' Methodologies	3	42111
42463	Modernists' Methodologies	3	42112
41223	Personal Status Fiqh I	3	-
41331	Fiqh of Jihad and Biographies	3	-
41227	Fiqh of Mu'amalat I	3	-
41326	Belief and Vows Fiqh	3	-
41352	Islamic Economics	3	-
41422	Fiqh of Mu'amalat II	3	-

B. Four Elective courses (12 credits)

Course #	Course title	Credit hours	Prerequisite
42261	Guided Caliphs' Biographies	3	-
42262	Prophetic Guidance	3	-
42263	Islamic Morals	3	-
42361	Objective Exegesis	3	-
42363	Textual Study in Exegesis	3	42111
42364	Textual Study of Hadith	3	42111
42365	Textual Study of 'Aqida	3	42112
42362	Contemporary Muslim World	3	42113
42366	Contemporary Perspectives	3	-
42367	Studies in Islamic History	3	-
42464	Arabic Rhetoric	3	-
42465	Hadith IV	3	42216

“Free” courses: 6 credits

Memorization of six chapters from the Holy Qur'an

Course descriptions

USE42213 Exegesis II

This course studies Al-An'am Sura in terms of wisdom behind the Meccan Holy Qur'an's focus on 'aqida, and lack of reference to legislative details. The course also studies other issues raised in the sura, with particular emphasis on 'aqida, absolute inimitability of Qur'anic verses. Students are expected to write term papers pertinent to exegesis of the sura.

USE42214 Hadith II

This course is a study of the 40 nawawiyah hadiths in terms of chain of authorities, and annotations. Students are expected to memorize these 40 hadiths.

USE42215 'Aqida II

Topics covered in this course are belief in prophets and messengers, proof of prophethood phenomenon, the need for it, wahiy and its manner of revelation, the miracle in terms of definition and in terms of being an evidence of prophethood authenticity, prophets' infallibility, refutation of violators' suspicions, belief in angels and heavenly books.

USE42311 Exegesis III

This course will be mainly concerned with the interpretation of Tabarak and 'Ama sections. *Tafsir ibn Kathir* and *Fayed Al-Qadir* will be considered in an analytical and comprehensive way.

USE42312 Hadith III

This course is a study of the following prophetic teachings cited in Sahih Muslim : Al-Faida'il, al-Qadar, Al-Ilm, Al-Thikar, Al-Istighfar, A-Tawbah, Sifat al-Munafiqeen, and their prescriptions, al-fitan, al-Jihad and Al-Amara.

USE42313 'Aqida III

This course is a continuation of Aqida II. It is a detailed study of iman in al-qada (divine judgment) and al-qadar (destiny) as well as the effect of this conviction in the Muslim's life. The course also considers conviction in the Day of Judgment, small and big signs of that day. It also examines the issue of al-Mahadi al-muntather, descension of Jesus, peace be upon him. Finally, the course will look at atheism, and apostasy from Islam and its aspects.

USE42314 Methods of Da'wa

This course aims at providing students with information and skills that help them in achieving success in their da'wa and guidance. Special emphasis will be given to psychological factors controlling the public or groups of people. The course also highlights the leading role of the preacher, as a leader, in the society. The course will also introduce methods of preaching and guidance: good call; examples, behavior, good citation or quotation from the Holy Qur'an and Hadith. Finally, the course will focus on Friday sermon, its conditions, characteristics of a good sermon, models of good sermons. Students are expected to deliver Friday speeches.

USE42315 Prophetic Biography

The course provides introduction to the study of prophet's life. It will also explain the benefits, characteristics and sources of his biography. The course is also an analytical study of the events in the life of the Prophet starting from the day of his birth to the day of his death.

USE42316 Qur'anic Qasas

This course introduces the notion of the story in the Holy Qur'an and its purposes. The course is also a study of models of Qur'anic stories, namely Joseph's and Moses' stories. There will also be a study of the Judaic versions of some stories.

USE42411 I'jaz al-Qur'an

This course begins with a definition of I'jaz (absolute inimitability) of the Holy Qur'an and the significance of its study. Then the course moves to show the difference between prophet's miracle and those of fellow prophets. The course also dwells on the Holy Qur'an stages of challenges, history of investigation into the absolute inimitability of the Qur'an and its development and refutation of the arguments suggesting its coincidence.

USE42412 Fiqh of Kitab and Sunna

This course provides an introduction to the definition of fiqh and sunna and shows the relationship of sunna to the Kitab. The course also studies the fiqh social prescriptions in the context of An-Noor Sura. These social prescriptions include adultery, false accusation of unchastity, visit etiquette, encouragement of marriage, some fiqh prescriptions pertinent to separation of husband and wife in the light of al-Kitab and Sunna. These prescriptions include divorce, its legality, prescription types, divorce initiated by wife after paying compensation to husband (Khul') and injurious assimilation of wife to mother (thihar).

USE42413 Comparative Religions

This course is a study of theology and the significance of studying it. The course provides also details about Semitic peoples' religions, namely Judaism and Christianity but the course does not ignore India's main religions and basic beliefs. A comparative study will be held among these religions.

USE42414 Islamic Sects

This course covers a number of topics: origin of Islamic sects, causes for their distinction from other sects. The course will focus on a number of these sects : Al-Asha'rah, Al-Matridiyah, Al-Khawarj and their offshoots, Shiites and their branches, the Druse, al-Marji'a, Al-Mu'tazilah. The course will briefly study these sects in terms of their origin, development and teachings, and their leaders. The course will also attempt to judge them in the light of al-Kitab and the Sunna.

USE42461 Exegesis IV

This course dwells on the interpretation of Al-Anfal Sura and "Qad Sami'a" section. It will also dwell on some social issues raised in the sura and the section in question. This is in addition to wisdom of legislation, and secrets of the Qur'anic bayan (illustration) as revealed in the verses. The course will examine scientific terms cited in exegesis books. Students will be asked to bring to class more than one book of exegesis to be trained on these exegesists' methods.

USE42462 Exegesists' Methodologies

This course aims at introducing exegesis, its conditions, and divisions, reasons for disagreement among scholars' methodologies in their interpretation of the Holy Qur'an. The course will attempt to find out the most suitable approach to interpretation. Selected models will be studied.

USE42463 Modernists' Methodologies

This course is a study of models made by modernists. These include authors of the six books, al-Imam Malik, some Hadith school methodologies such as al-Kufa and al-Basra schools and modernists' approaches in certain subjects.

USE42261 Guided Caliphs' Biographies

This course introduces the Guided Caliphate and its span starting from Abu Bakr's caliphate to Ali's caliphate. The course will highlight Abu Bakr's qualities, his status in Islam; Omar's caliphate, his qualities, outstanding legacy during his rule, his assassination; Othman's caliphate, his qualities, major contributions, beginning of Fitna, and his assassination; Ali's caliphate, his personality, and works, the fitna, Al-Jamel and Sifeen battles, al-Khawarij and killing of Caliph Ali.

USE42262 Prophetic Guidance

This course examines selected hadiths, pertinent to Islamic morals, taken from the prophet's guidance. The course will include the study of a number of hadiths that soften the hearts and bring them closer to Allah Subhana and decrease one's clinging to mundane affairs of this life and teach Muslims good morals.

USE42263 Islamic Morals

This course is a theoretical study of morals such as commitment, responsibility and rewarding. It is also a study of models of practical morals such as honesty, patience, cooperation, individual and group ethics. The course will provide a textual study of morals, in some heritage books, and general human morals.

USE42361 Objective Exegesis

This course first introduces what objective exegesis is and moves to show disagreement among scholars concerning objective exegesis, the difference between such interpretation and analytical interpretation. Objective interpretation models will be provided : Al-Ikhlās, (sincerity), salat, jihad, sustenance; istikhbar and istid'af verses are cases in point. Instructor chooses subjects different from those taught in previous similar courses.

USE42363 Textual Study of Hadith

In this course, a number of texts, taken from Hadith books, will be selected and studied. These include *Fath al-Bari*; *Shar'h a-Nuwawi 'Ala Muslim*; *Sharih a-Sayyouti 'Ala al-Muwata'*; *'Awn al-Ma'boud bi Shari'h Sunan Abee Daoud*, and *Matn Nukhbal al-Fikr fi Mustalah Ahl al-Akhbar*, ...

USE42364 Textual Study of 'Aqida

Instructors, in this course, choose different topics for the textual study of old books on aqida. These books include *Al-Aqida al-Jahawiyah*, by Abee Ja'fer al-Tahawi, and edited by Ibn Abee Al-Izz Al-Hanafi. Students will be introduced to his methodology in presenting the aqida and its issues. These will also an expansion of the explanation of some selected topics.

USE42365 Contemporary Muslim World

Topics covered in this course include Muslims between today and yesterday, Arabs in pre-Islamic period, conquests, Ummayyad caliphate, Abbassid caliphate, colonialism, cultural invasion, reasons for deviation of contemporary Muslim action, state of Muslims in their own countries and in the world. The course will focus on how to re-educate the Muslim nation anew, how to educate the da'iyah (caller for Allah), and the group. The course will also highlight role of Islamic movement in the world, future of the Muslim world, the Palestinian question from an Islamic perspective.

USE42366 Contemporary Perspective

This course covers a number of topics: general characteristics of contemporary ideological trends, the philosophical composition of these trends, their historical development up to the end of the 20th century. These ideologies include Marxism, nationalism (pan-Arabism), capitalism, pragmatism, and existentialism. The course will show how these ideologies can be refuted from an Islamic perspective.

USE42367 Studies in Islamic History

This course is an elaborate study of Islamic history. It will mainly focus on the wonders and lights of contributions made by Muslims in the past. This aims at convincing the minds of people to accept the straight path of Islam as a way of life. The course aims also at refuting suspicions and poisonous arguments raised by orientalist and enemies of Islam.

USE42464 Arabic Rhetoric

This course deals with rhetoric namely its three sciences: al-Bayah, al-Badi' and al-Ma'ani. The course aims at developing students skills and talents and showing them areas of beauty and artistic consistency in Arabic. Qur'anic text and literary works will be provided as practical examples.

USE42465 Hadith IV

In this course, students will be required to study 20 hadiths, chosen by instructor, from *Sahih al-Bukhari*. The twenty hadiths must cover the beginning of wahiy (revelation of the Qur'an), science and beginning of creation. Students will be also required to study another 20 hadiths covering the following topics : al-fitan, al-I'tisam bil-Kitab wa Sunna, tawhid, Khaber al-Wahid and *Kitab al-Ahkam*.

FACULTY MEMBERS

Associate Professors

Khader Sawandek

Ph. D. in 'Aqida,

AL-Imam Mohammed University, Saudi Arabia, 1984.

Hilmi Abdel Hadi

Ph. D. in Hadith Sciences,

Umm Al-Qura University, Saudi Arabia, 1983.

Mohammed Hafeth al-Shuraideh Ph. D. in 'Aqida,
AL-Immam Mohammed University, Saudi Arabia,
1983.

Assistant Professors
Hussain al-Naqib

Ph. D. in Hadith Sciences,
Umm al-Qura University, Saudi Arabia, 1991.

Muhsen al-Khalidi

Ph. D. in Exegesis,
Umm Durman University, Sudan, 1995.

Khaled 'Ulwan

Ph. D. in Hadith Sciences,
Umm Durman University, Sudan, 1997.

Instructors

Ghassan Badran

M. A. in Exegesis,
University of Jordan, Amman, Jordan, 1988.

Ra'iq Su'aidee

M. A. in Exegesis,
University of Jordan, Amman, Jordan, 1993.

COLLEGE OF FINE ARTS

Historical background

The College of Fine Arts had its beginning in 1981 when it was a department, in the College of Arts, offering free courses and college compulsory and elective courses within its academic program. Then in 1985, the department became fully-fledged offering a B.A. degree in Fine Arts. The first batch of students were admitted to the department in 1985. At the time, it offered two specializations: Musicology and Plastic Arts. Then, in 1992, the department was separated from the College of Arts and became the College of Fine Arts. Since then, the college has had undergraduate programs for three majors, all leading to a B.A. degree. These programs are Musicology, Painting, and Interior Design.

The college, it should be stated, is the first and the only one in Palestine which awards an academic degree in arts and music. The college has made it possible for Palestinian talents to join its academic programs to help them realize their ambition. The college has successfully refined and polished these talents and trained them to shoulder the task of preserving and publishing and spreading Palestinian folklore heritage: art and music.

Through its academic programs, the college has sought to train technical cadres capable of teaching arts and music in Palestinian schools and other educational institutions. In addition to this academic mission, the college seeks to encourage people in the field of music and arts to conduct research in different domains of arts studies. In this respect, a number of the college graduates have written their master theses on the methods of teaching arts and on arts curricula.

1. Undergraduate degree: study plan

The college's study plan leads to a B.A. degree in fine arts in three majors: Musicology; Painting and Interior Design.

To obtain a B.A. degree in any of the three majors, a student must complete a minimum of 137 credits which include university, college and department compulsory and elective courses in addition to "free" requirements (6 credits).

2. Admission requirements

Acceptance into the College of Fine Arts is based on student's meeting of the following conditions:

2.1 All applicants must have passed the Tawjihi (High School Certificate) or equivalent and with a minimum score of 60%.

2.2 An applicant is admitted into the college after he/she has passed a placement test administered by the college in line with specific conditions and criteria set up by the college.

2.3 Musical and artistic talent is an essential condition for admission to college.

Based on these conditions, students are admitted to the college according to the following priorities: artistic talent; placement test and tawjihi score (60%).

To join the College of Fine Arts, a student must complete the following college courses:

I. College courses (30 credits):

IA. Compulsory courses (21 credits)

Course #	Course title	Credit hours
81111	Introduction to Musicology	3
2111	Introduction to Plastic Arts	3
83112	Aesthetics	3
82113	Introduction to Arts Education	3
82114	Introduction to Music Education	3
81112	Chorale Recital	3
27120	Introduction to Computer Science	3
Total	Introduction to Musicology	21

II. Requirements for specialization: see relevant department

III. Free courses (6 credits)

Students must complete free courses offered by university departments, save courses offered by students' own departments to non-majors.

Course #	Course title	Credit hours
81114	Palestinian Music Folklore	3
81115	Music Culture	3
81116	Palestinian Popular Arts	3
81117	Musical Acoustics	3
81118	Acoustics Equipment	3
81119	Art of Presentation	3
82115	Arabic Calligraphy	3
82117	Photography	3
82118	Exhibition Organization	3
81120	Theatre	3
82121	Art Culture	3

Course descriptions

IA. Compulsory courses:

ART81111 Introduction to Musicology

This course begins with a definition of music as an art and a science and different language music forms and divisions; writing of these forms on musical staff, manner of drawing a clef sign, multi music scales, intervals among them, intervals among tunes, and different passages. The student also learns about international music forms like

symphony, opera, and Arabic forms: poem (qasida), muwashaht, adwar, and sama'i.

ART82111 Introduction to Plastic Arts

This course is a study of the most important elements of art works: line, color, shadow, light, distance, velocity, space, texture, rhythm. The course is also a historical study of plastic arts development, from the Stone Age up to the present and schools of plastic arts in the 20th century. The course looks at Pharonic arts as a representation of Eastern civilization, Greek arts as a representation of Western civilization; Islamic art, arts in Italy's Renaissance Age (classical school). In this course, students are expected to conduct a field study on aesthetic patterns in Palestinian villages.

ART83112 Aesthetics

Topics covered in this course include nature of aesthetics, its trends, meaning, measurements, and its relationship with other disciplines. The course also examines different aesthetic concepts, form and content, beauty and ugliness in arts; tragedy and comedy in arts.

ART82113 Introduction to Arts Education

This course dwells on the general functions of education: meaning of education and the necessity of education for both the individual and the society. The course also highlights the role of arts education and its impact on both the individual and society. At the end, the course looks at the Greeks' and the Romans' views of the role of arts education in addition to modern theories and schools on arts education.

ART82114 Introduction to Music Education

The aim of this course is to introduce students to the role of music in education throughout the ages. The course will particularly examine the meaning, objectives and influence of music education on human being's physical, psychological, mental and social life; this is in addition to music educational values. The course, further, examines modern music education theories and trends such as those of Carl Orff (German), Zoltan Kodaly (Hungarian), and Darius Milhaud (French).

ART81112 Choral Recital

In this course, students are expected to memorize at least 25 songs. Students will make a group recital of these songs taking into consideration rules and ways of singing.

ART27120 Introduction to Computer Science

This course introduces the basics of computer use.

IB. Elective courses

ART81114 Palestinian Music Folklore

This course is a study of Palestinian people's music output, popular Palestinian music pattern, popular music analysis at the vocal singing and instrument levels. The course also examines characteristics and qualities of instrumental music and Palestinian popular songs. The course is also a study and an analysis of different popular music forms and models. The course provides models of popular songs and introduces popular music

instruments in terms of their production, vocal structure, and ways of playing on these music instruments.

ART81115 Music Culture

This course aims at introducing students to international music pieces (compositions) as well as Arab classical music ones. Students are also introduced to opera music, operetta and ballet. Students will be given access to these through videocassettes.

ART81116 Palestinian Folklore Arts

This course stresses the importance of studying folklore and how it is inspiring for popular artists. The course will cover traditional crafts such as glass blowing, pottery making, textile industry, carving on metals, carpet industry, porcelain, straw and bamboo industry; popular embroidery and development of one popular arabesque. The course also attempts to develop local folklore and heritage.

ART81117 Music Acoustics

This course is a study of music acoustic elements, namely vibration, sound waves, sound volume, sound degree, sound pitch, types of sounds, measurement of sound intervals. The course also examines acoustics of wind, string and rhythmical music instruments. The course ends with a look at diffusion of sound in space: closed and open chambers.

ART81118 Acoustics Equipment

This course focuses on different types of Acoustic equipment and its components. Students will learn about types of microphones, loudspeakers, mixers and monitors. Students will also receive instruction on the calculation of the sound volume necessary for the chamber and external theatres depending on their dimensions.

ART81119 Art of Presentation

This course examines theoretical and practical means to develop student's articulation ability to become capable of making good oral presentations. The course will introduce the vocal apparatus and its role in the development of oral presentation skills. Students will learn about function of each organ and will receive training on how to develop their ability to produce speech. In this respect, student will learn the elements of speech and how to deal with them.

ART82115 Arabic Calligraphy

This course surveys types of Arabic art of fine handwritings, their features, characteristics and the hows of using them. Historical models will be introduced and students will be trained on how to produce these types of handwritings.

ART82117 Photography

Students in this course will learn about the role of the camera and how it can be employed artistically.

ART82118 Exhibition Organization

This course focuses on methods of organizing private and public art galleries and shows.

ART81120 Theater

In this course, students are introduced to types of theaters, their construction and measurements, their shapes, (indoor, open and mobile theaters). Also students are acquainted with forms of lighting and their intensification. The course also provides a nutshell about drama, melodrama, comedy and tragedy.

ART82121 Art Culture

This course aims at introducing students to world and Arab paintings. Videocassettes and slides will be used to introduce artistic patterns of different art schools in order to expand students' horizons of plastic arts.

DEPARTMENT OF MUSIC

I. B.A. Degree in Music

IA. Compulsory courses (51 credit hours)

Course #	Course title	Credit hours	Prerequisite
85211	Music History and Appreciation I	3	-
85212	World Music Rules	3	-
85213	Solfeggio and Rhythm I	3	-
85214	Arab Music Rules	3	-
85215	Piano I	3	-
85216	Solfeggio and Rhythm II	3	85213
85311	Music History and Appreciation II	3	85211
85312	Piano II	3	85215
85313	Oriental Solfeggio	3	-
85314	Harmonics I	3	-
85315	Choirology	3	-
85316	Piano III	3	85312
85411	Music Analysis	3	-
85412	History of Arab Music	3	-
85413	Harmonics II	3	85314
85414	Methods of Teaching Music	3	-
85415	Rules of Musical Composition	3	-
85416	Muwashahat	3	-
85417	Computer Music Recording and Distrib.	3	-

IB. Elective courses (Choose 27 credits)

Course #	Course title	Credit hours	Prerequisite
85251	Specialty Instrument I	3	-
85252	Arab and International Music Instruments	3	-
85253	School Songs and Chants	3	-
85351	Specialty Instrument II	3	85251
85352	Ensembles I	3	-
85353	Methods of Developing Singing Voice	3	-
85354	Specialty Instrument III	3	85351

85355	Ensembles II	3	85352
85451	Instrumental and Vocal Distribution	3	-
85452	Specialty Instrument IV	3	85354
85453	Improvisation Techniques	3	-
85455	Polyphony	3	-
85456	Music Therapy	3	-

Course descriptions

MUS85211 Music History and Appreciation I

This course is a study of music history from ancient times until the end of classical period. The student learns about development of music and musicians who have contributed to this development. The course also examines most important books on music during the same period. Emphasis is placed on the music forms and schools and their impact on development of music as an art and a science.

MUS85311 Music History and Appreciation II

This course continues Music I 85211. It traces the history of music since the beginning of the Romantic period. The course looks at music schools which emerged at the outset of the 20th century and contemporary classical music. Like in Music I, students will learn about development of music and the musician's influence on this development. The course also examines major music publications and compositions during the period. This will be in addition to music forms and music schools.

MUS85212 World Music Rules

This course is a study of fundamentals and theories of music; musical tunes and their names; music clefs and their types; music signs and their forms; music intervals; marks of transformations, music scales and types; rhythm and meters; speed of tempo and its phonetic terms; abbreviation symbols; reiteration, and legato; embellishment and stacato signs and method of performance/dynamics.

MUS85213 Solfeggio and Rhythm I

MUS85216 Solfeggio and Rhythm II

In these two courses, students will learn about the theoretical and practical foundations for the development of their hearing and rhythmic abilities. To this end, students will be asked to write on the music staff and will practice spelling musical exercises of one, two, three and four voices. Students will also sing and write from dictation without using music instruments. The rhythmic exercises will be needed primarily for the students' rhythmic sense.

MUS85214 Arabic Music Rules

This course is a study of Arabic music scales namely maqamat in terms of their genres and structures. The course is also a study of Arabic meters and rhythms in addition to the

study of Arabic instrumental and singing forms.

MUS85215 Piano I; MUS85312 Piano II; MUS85316 Piano III

These three courses aim at enabling students to play the piano through a well-defined academic program which involves the use of hi-tech and playing simple musical pieces.

MUS85313 Oriental Solfeggio

This course involves melodic exercises in which a number of Arab rhythmic maqmas will be used. These include rast, nahawand, bayati, siga, huzam, suznak, saba, al-Kurd, and al-Hijaz.

MUS85314 Harmonics I; MUS85413 Harmonics II

These two courses examine the theory and study physical properties and characteristics of musical notes (chords). This science has to do with composition of tones. It's also called science of chords. Students will learn about the structure and types of chords, and how musical melodies are formed into multiple sounds in a harmonious way among themselves.

MUS85315 Choirology

Topics covered in this course include the hows of choral formation; types of chorales; distribution of choral voices; characteristics of voices participating in chorale; the hows of choosing choral songs, choral members' techniques.

MUS85411 Music Analysis

This course begins with an analysis of different music forms, and then moves to a detailed dissection of music pieces in terms of melody and its kinds; rhythm; meters; scales; expressive characteristics; analysis of simple duet form and simple trio form; compound duet form and compound trio form. The course ends with a look at musical variations and sonata forms.

MUS85412 History of Arab and Palestinian Music

This course surveys history of Arab music since the pre-Islamic period. The course dwells on the most important Arab musicians and musical compositions: muwashahat (post classical forms of Arab poetry) popular songs and poems ... (taqtoqa) The course is also a reading of important music publications of the Ummayyad and Abbassid periods. In the second half of the course, the emphasis is placed on formal Palestinian music, Palestinian musicians' works of the early 19th century as well as the 20th century.

MUS85414 Methods of Teaching Music

Topics covered in this course include theoretical and practical aids, Arab and international, used in the teaching of music in both primary and secondary schools. Emphasis is placed on the teaching of music to children in the first grades. The course highlights methods of teaching music and the enhancement of pupils' learning and educational potentials.

MUS85415 Rules of Musical Composition

Students in this course become acquainted with the foundations and rules of composition, starting from a simple version, to the composition of songs and simple music pieces. The course also introduces rules of instrumental and vocal composition; methods followed in composition of school songs and chants, and music pieces for school music bands.

MUS85416 Muwashahat

Students will learn about the composition of muwashahat and their texture, forms and development. Students will also learn about their singing and each student is expected to memorize a minimum of 20 muwashahat in different maqamat and rhythmic.

MUS85417 Computer Music Recording and Distribution

This course aims at introducing students to computer music programs, and training them on how to use them to enable students to make music recording, writing and distribution through these programs.

MUS85251 Specialty Instrument I

This course dwells on the principles of playing on an instrument chosen by the student.

MUS85351 Specialty Instrument II

In this course, students receive technical training on how to play an instrument accompanied with simple music pieces.

MUS85454 Specialty Instrument III

In this course, students get more technical training and are required to place music pieces on different music forms.

MUS85452 Specialty Instrument IV

This course caps technical training on music instruments. Students are expected to play full pieces on instruments of their own choice.

MUS85252 Arab and International Musical Instruments

This course is a study of orchestral instruments and classical Arab instruments in terms of their types (wind, string, reed, percussion), their texture, vocal range, characteristics, techniques of using them and their role in Arab orchestra and bands.

MUS85253 School Chants and Songs

This course is designed to introduce students to school songs and chants. To this end, students will be trained to play and sing. They will also learn how to teach songs and chants to school students.

MUS85352, MUS85355 Ensembles I-II

In this course, students learn the types of small bands: duets, trios, quartets, pentas ... Students also learn about chamber bands and will participate in such bands.

MUS85353 Methods of Developing Singing Voice

This course is a study of methods followed in developing a singing voice and

identification of human voice in terms of its qualities and tone characteristics. It also studies the development of the articulatory apparatus, the ability to regulate the breathing process during singing. To this end, students will take a number of vocal exercises which will lead to the extension of voice range and volume. The course ends with an introduction to techniques and methods of singing performance.

MUS85451 Instrument and Vocal Singing Distribution

This course mainly focuses on how to deal with school chants and how to distribute them among choral voices and with or without a music band. Students will be introduced to practical methods of distributing musical pieces among school music bands.

MUS85453 Improvisation Techniques

The aim of this course is to train students to compose immediate musical sentences. Students will be asked to complete specific musical sentences. Then, they will portray a specific subject by playing and innovating the composition of harmonic pieces (chords) for well-known melodies. The course also emphasizes the enhancement of students' technical capabilities. Students will be trained to make improvised playing according to different rhythmical groups. This will be in addition to supporting the student's ability to move among different scales by playing musical sentences.

MUS85455 Polyphony

This course focuses on music with two or more independent melodic parts sounded together (polyphony). Students will learn the principles of composing "strict or classical polyphony" "canon" two melodic sounds, two-band fuge and organum.

MUS85456 Music Therapy

This course introduces modern techniques followed in music therapy particularly role of music in treatment of psychiatric cases. The course also aims at developing the hearing ability of people suffering from hearing weaknesses and making use of musical elements to improve sensory motor coordination.

FACULTY MEMBERS

Associate Professors

Ghawi Ghawi Ph.D. in Music-Choral Leadership,
Conservatory National Institute,
Sophia, Bulgaria, 1981. (on leave)

Instructors

Ahmed Musa M.A. in Music and Educational Administration,
An-Najah National University, Nablus, Palestine, 1995.

Assistant Instructors

Ibrahim al-Kharoubi B.A. in Music, College of Music Education,
University of Hulwan, Egypt, 1982.

Khalid Sadouq B.A. in Music, College of Fine Arts,
An-Najah N. University, Nablus, Palestine, 1994.

Teaching Assistants

Ahmed Abu Dayeh B.A. in Music, College of Fine Arts,
An-Najah N. University, Nablus, Palestine, 1993.

Ammar Qadamani B.A. in Music, College of Fine Arts,
An-Najah N. University, Nablus, Palestine, 1998.

Habib Bisou B.A. in Music, College of Fine Arts,
An-Najah N. University, Nablus, Palestine, 1996.

DEPARTMENT OF PLASTIC ARTS

I. Undergraduate B.A. degree in Painting and Interior Design

IA. Compulsory courses in painting (51 credit hours)

Course #	Course title	Credit hours	Studio	Prerequisite
83211	Art History and Appreciation I	3	-	-
83212	Theory of Colors	3	-	-
83213	Academic Drawing I	3	6	-
83214	Painting I	3	6	-
83215	Artistic Anatomy	3	-	-
83216	Academic Drawing II	3	6	83213
83311	Painting II	3	6	83214
83312	Academic Drawing III	3	6	83216
83313	Art History and Appreciation II	3	-	83211
83314	Painting III	3	6	83211
83315	Academic Drawing IV	3	6	83212
83316	Painting IV	3	6	83314
83411	Contemporary Islamic and Arab Arts	3	-	-
83412	Palestinian Plastic Arts Movement	3	6	-
83413	Painting V	3	6	-
83414	Methods of Art Teaching	3	-	-
83415	Graduation Project	3	-	-

IB. Elective courses (choose 27 credits)

Course #	Course title	Credit hours	Studio	Prerequisite
83251	Technology of Painting	3	-	-
83252	Graphics I	3	6	-
83253	Open Landscape I	3	6	-
83351	Graphics II	3	6	83252
83352	Open Landscape II	3	6	83253
83353	Design of Theatrical Scenery	3	-	-
83451	Decorative Styles	3	-	-
83452	Sculpture	3	6	-
83453	Graphics III	3	6	83351
83454	Plastic Arts Design	3	-	-
84211	Decorative Design I	3	6	-
84252	Metals and Woods I	3	6	-

84253	Design Technology	3	-	-
84311	Decorative Design II	3	6	84211
84352	Ceramic I	3	6	-
84453	Woods and Metals II	3	6	84252

IC. Compulsory courses in Interior Design (51 credit hours)

Course #	Course title	Credit hours	Studio	Prerequisite
83211	Art History and Appreciation I	3	-	-
83212	Theory of Colors	3	-	-
83213	Academic Drawing I	3	6	-
83216	Academic Drawing II	3	6	-
83312	Academic Drawing III	3	6	-
83313	Art History and Appreciation II	3	-	83211
83315	Academic Drawing IV	3	6	-
83411	Contemporary Islamic and Arab Arts	3	-	-
83412	Palestinian Plastic Arts Movement	3	-	-
83414	Methods of Art Teaching	3	-	-
84211	Decorative Design I	3	6	-
84212	Perspective	3	-	-
84311	Decorative Design II	3	6	84211
84312	Decorative Design III	3	6	84311
84411	Decorative Design IV	3	6	84312
84412	Decorative Design V	3	-	-
84413	Graduation Project	3	6	-

ID. Elective courses in Interior Design (Choose 27 credits)

Course #	Course title	Credit hours	Studio	Prerequisite
83214	Painting I	3	6	-
84251	Vitrage I	3	6	-
84252	Metals and Woods I	3	6	-
84253	Design Technology	3	-	-
84254	Graphic Design I	3	6	-
84351	Mosaics	3	6	-
84352	Ceramic I	3	6	-
84353	Technical Drawing	3	-	-
84354	Vitrage II	3	6	84251
84355	Graphic Design II	3	6	84254
84451	Introduction to Three-Dimensional Design	3	-	-

84452	Ceramic II	3	6	84352
83253	Open Landscape I	3	6	-
84453	Metals and Woods II	3	6	84252
84454	Quantities and Specifications	3	-	-
84455	Computer - Aided Design	3	6	-
84456	Arab and Islamic Decoration	1	-	-

Course descriptions (Department of Plastic Arts)

PLA83211 Art History and Appreciation I

This is a study of Arab East ancient arts in primitive ages, and the historical Arab East arts during the dynasties' rule. It is also a study of Western ancient arts. In addition, the course examines the aesthetics and historical value of Islamic artistic styles: the Ummayyad; the Abbassid; the Ummayyad's style in Andalusia; the Fatimid; the Seljuki; the Ayyubi; the Mongolian; the Moroccan Spanish; the Mamluki; the Safawi; the Ottoman Turkish, and the Islamic art in India.

PLA83212 Theory of Colors

This is a study of color as one important element in formation scientifically and organizationally, including weaving processes, and psychological and physiological influences of colors and the ways of using these colors in daily life.

PLA83213 Academic Drawing I; PLA83216 Academic Drawing II;

PLA83311 Academic Drawing III; PLA83315 Academic Drawing IV

These four courses are offered over four semesters. In these successive courses, students learn methods of drawing in pencil, charcoal, and acrylic. They will also learn how to use oil and water colors. To this end, they will be provided with real models of glasswares and shapes. The course will also introduce students to names of living creatures and how to draw them.

PLA83313 Art History and Appreciation II

This course is a study of art in Europe's Renaissance Age, namely the different schools of art such as classicism, romanticism, surrealism and realism ... The course also looks at contemporary art trends in the 20th century the world over.

PLA83214; PLA83311; PLA83314; PLA83316; PLA88413 Painting I-V

These courses aim at sharpening students' accuracy of observation, planning and the study of elements, both living and non-living, and the detection of aesthetic values in these elements (objects). The courses are also concerned with the hows of multi-use of instruments and equipment and raw materials pertinent to photography and the acquisition of technical performance skills relevant to oil colors, raw materials, water colors and wax colors used in painting. The students will also make visits to local plastic art exhibitions. At the end of the course, students will hold an exhibition of their productions in the department. This course is offered every semester.

PLA83215 Artistic Anatomy

This is an anatomical study from an artist's point of view. It includes the study of the skeleton, body muscles and functional physiology in terms of its external shape. The course also focuses on issues of fats in the body. A physician, specialized in anatomy, will instruct this course.

PLA83411 Contemporary Islamic and Arab Arts

This is an analytical and historical study of Islamic art as an innovative art. It includes the study of characteristics of Islamic art and its relationship with Islamic belief and most important Islamic artistic decorations: Islamic artistic styles, Islamic architectural elements, Islamic painting, Islamic applied arts, and contemporary plastic arts in the Arab World. It also highlights famous Arab artists and their works. The course will attempt to make an analysis of these works, show them in slides. Each student is required to write a report on one of these Arab artists.

PLA83412 Palestinian Plastic Art Movement

This course focuses on the elements of the artistic work and traces the historical development of plastic arts in the Arab region and in Palestine in particular prior to 1948. It also looks at art after 1967 during the rise of the Palestinian revolution and the beginnings of the Palestinian plastic art movement in the occupied lands. The course will introduce leading Palestinian artists in these lands and will make an analysis of their works, and local art exhibitions. It will also attempt to come up with a new vision for the future course of this movement.

PLA83414 Methods of Art Teaching

This course covers a number of topics: role of art in education, goals of art education, nature of works of art, children's arts and stages of their development; art instructors at work; art work rooms; role of art teacher in school life; the course also introduces art curriculum and its foundations, methods of evaluation, art education curricula at present and in the past; choice of academic material and its organization; link between art and other disciplines, content of primary stage curriculum; unit planning, illustration of art activities, expressive art activities, instructional aids in art teaching in units; teacher's role in curriculum implementation and treatment of different services and art education lesson preparation.

PLA83415 Graduation Project/ Painting

In this course, each student is expected to submit a painting project. Students should first select a topic in coordination with their instructor. Then they draw up the subject in a number of paintings of different sizes.

PLA83251 Technology of Painting

This course is a study of raw materials and instruments and techniques of using them in art of painting and the preparation of artistic works.

PLA83252 Graphics I; PLA83351 Graphics II; PLA83453 Graphics III

Students will be trained on how to use pencils of different degrees of hardness, how to draw in charcoal and Chinese white/black ink. The students will draw sketches and crocks in order to harmonize hand movement with eye movement. They will also draw still and live objects, recognize their degrees and their relationship with each other. The course will also introduce basic printing processes: printing on silk, aluminium, wood block, plates, lithographic stone, and zinc plates. Students will manually implement typing of sketches and crock drawing to produce a number of copies of each sketch/crock.

PLA84252 and PLA84453 Metals and Woods I and II

In this course, students are introduced to various types of metals, innovative designs, their formation and implementation on different metals: zinc, aluminium, yellow and red copper, plates. The students will also learn about the properties of these metals, techniques of their welding, decoration processes, finishes, polishing, silver, nickel or copper coating; coloring processes, oxidization by using certain acids, coloring with fire (burning); using instruments, proper ways of using them in workshops. The students also get an idea about drawing on wood by heating and making final finishes on paintings by using wood paints.

PLA83253 and PLA83352 Open Landscape I and II

This course takes place outside the classroom. All students and the instructor go out to explore nature and find out aesthetic values in landscape. Sites visited include villages and old traditional places. During these visits, students will identify natural elements and artistic foundations of a work of art. They will also try to make drawing of a variety of objects. They will make sketches of what they see. By the end of the course, students will get the feeling of aesthetic values available in local environment.

PLA84352 Ceramic I

Students, in this course, learn about the concept and stages of ceramic making; clay pottery in terms of its making, types and problems; robe formation technique; slide formation technique, ceramic carving; preservation of pieces during process; process of burning pieces to get pottery; glazing process and techniques to produce ceramic.

PLA84452 Ceramic II

This course covers a number of topics using electric wheel, ceramic wall works, way of operating an electric kiln, temperature control, filling kiln with ceramic pieces, glazing, technique of installation to get the required color and forms.

PLA83353 Design of theatrical scenery

Students are trained on how to set up a design and décor for theatre stages: drama, melodrama, comedy, tragedy and opera.

PLA83451 Decoration Styles

This course is a historical study of decorative pattern development in the Arab East, and the ancient world. It also studies decoration styles, in the West and contemporary art. This includes international styles of furniture and their decoration patterns. Students will

be shown slides, pictures and drawings.

PLA83452 Sculpture

This course aims at developing student's proficiency in realizing or expressing a three-dimensional form by modeling, carving and casting meaningful objects. The course begins with the formation of relief carving in the form of walls made from clay material. Emphasis is on the production of free standing and relief sculpture for specific sites. Students are also acquainted with form-casting processes and ways of clay preparation for modeling.

PLA83454 Design in Plastic Arts

This course is concerned with the elements of design, derived elements, building of design, evaluation of works of art. There will be also classroom practical projects to accompany theoretical study of design elements.

PLA84253 Design Technology

This course covers a number of topics: traditional and innovative modern raw materials in the areas of internal design in terms of characteristics and potentials during formation; stained methods of coatings and structures. Students will be encouraged to use available environmental materials in a scientific and innovative manner during its functional and aesthetic use. The course also includes making field visits to local sites.

PLA84211; PLA84311; PLA84312; PLA84411; PLA84412 Decorative Designs I-V

These courses are slated for Interior Design majors. Students are trained to make appropriate designs for different projects: interior designs which include solutions for various building internal spaces. It also includes designs of their furniture. The courses also deal with design of posters, commercial designs, emblems (logos), clothing designs, arabesque, stage design, color glass wall designs. By the end of these courses, students are expected to become "engineers" capable of designing different decorations needed for different purposes.

PLA84212 Perspective

This course aims at providing the student with the necessary information that enables him to draw the perspective of designing ideas depending on plans (blueprints) before their implementation. The students will also develop their potentials to better express these designs. This will make him/her surpass the stage of technical drawing to creativity and confidence in his work. The course also aims at developing the student's innovative talent to make him develop his/her artistic appreciation and have the real feeling of the values of different designs. Students will learn also about all types of perspectives: I vanishing point perspective; II vanishing point perspective and III vanishing point perspective. The course finally looks at laws of linear perspective in the rendering of three-dimensional objects and scenes on two-dimensional surfaces.

PLA84413 Design Graduation Project

Each student is expected to complete a design project in coordination with his/her instructor. The project includes full drawing of the subject.

PLA84251 Vitrage I and PLA84354 Vitrage II

These two courses are a study of different types of glasses and their cutting techniques, uses and coloring. The courses focus on techniques of coloring glass with lead, copper and gypsum.

PLA84254 Graphic Design I

This course teaches the ABCs of general design: study, analysis and shorthand. Students will develop a proficiency in the knowledge and application of the elements of design including color, typography composition, space ... Students are also acquainted with the visual elements, principles and techniques of graphic design; printing processes and promotional production techniques.

PLA84355 Graphic Design II

This course builds on Graphic Design I. Students will be introduced to ideas, advertisement and promotion techniques and designs: logos, posters, brochures, visual ads published in newspapers and magazines. In addition, students will learn about technology of commercial printing and offset typing. In addition, they will study the market, consumer behavior and its relationship with the design of a promotional product, page layouts, package designs and their importance in increasing sales of products. There are also practical applications of package designs.

PLA84351 Mosaics

This course is a historical study of mosaics throughout the ages. The course will focus on manufacturing techniques, tools and mosaic raw materials. Students will complete some projects by using color paper. They will also master the technology of using stone and marble in mosaic production.

PLA84353 Technical Drawing

This course is designed to help students acquire the ability to read and interpret technical, rough and three dimensional drawings, as well as to master principles of technical drawing. This will enable students to link theoretical material with practical knowledge. The course also investigates international language of communication which enables students to transfer information and determine its forms. Student will be able to learn basic and main measurement rules and terms. Students will also develop their drawing skills, by various means, to solve engineering problems that have two and three dimensions. The course finally introduces students to American and European systems and standards, particularly concerning first-angle and third- angle projections.

PLA84451 Introduction to Three-Dimensional Design

This course acquaints students with the hows of feeling the third dimension of works and technical compositions. Students will be required to perfect three-dimensional objects and will learn how to deal with necessary raw materials.

PLA84454 Quantities and Specifications

This is a physical science course directly related to materials, their properties and

characteristics, as well as to fundamentals of mathematics and arithmetics. It is also strongly related to architectural design and executive drawings. Specifications and estimations are a must for internal design. Students will learn about specifications of building materials, and estimation of quantities. They will also learn about functional aesthetic, economic and human aspects of architecture. By the end of the course, students will be able to identify different materials, their specifications and characteristics, estimation of quantities for a designed project. This also includes estimation of quantities, workmanship and different finishes.

PLA84455 Computer Aided Design

This course aims at developing student's drawing skills. They will be introduced to graphic hardware, elementary processes and problem solving in auto cad, two-and three-dimensional space. They will also produce drawings through printers and plotters.

PLA84456 Arab and Islamic Decoration

This course begins with the concept of decoration units and places of their presence throughout the ages: ancient man; Pharonic Egyptian; Greek; Byzantine; Islamic and Renaissance. Then the students are taught how to make decorations on different materials; conditions for good decorations, types and methods of decoration applications: Symmetry, frequency, asymmetry and sameness. Students will be required to design a place for a copper pot or a metal shutter for a window or a tea set with different kinds of decorations.

FACULTY MEMBERS

Assistant Professors

Mohammed Attallah Yaseen Ph. D. in Renovation, University of York, UK, 1995.

Instructors

Mohammed Abu Sitta M.A. in Oil Painting,
College of Fine Arts, Alexandria, Egypt, 1979.

Assistant Instructors

Ahmed al-Hajj Hamad B.A. in Graphics, Damascus University,
Damascus, Syria, 1989.

Bassam Abul Hayat B.A. in Painting, Damascus University,
Damascus, Syria, 1986.

Kamal Zeidan B.A. in Plastic Arts,
Yarmouk University, Irbid, Jordan, 1993.

Hassan Nu'eirat B. SC. in Design Engineering,
Kharkov University, Russia, 1997.

Teaching Assistants

Mai el-Khatib B.A. in Interior Design,
Jordanian Women University, Amman, Jordan,
1996.

COLLEGE OF PHARMACY

Background

The College of Pharmacy at An-Najah National University was established in 1994/95 in order to meet the demands for professional pharmacists and a clinical pharmacy practice in Palestine. Also, students are prepared for jobs in the pharmaceutical industry in Palestine and the region, To this end, the students are provided with a thorough understanding of diseases and medications. Training and research are conducted in modern, well-equipped laboratories. This is a five-year program (10 academic semesters) leading to a B. Sc. in Pharmacy.

The college depends on a group of highly qualified full-time professors, most of whom are graduates of universities in the U.S.A. and U.K. Approximately 80-100 outstanding students from Palestine and the Gulf countries are enrolled in the college annually. The total number of students in the college, at all levels, is approximately 500. More than 300 students have graduated so far from the college, and most of them are working in highly esteemed jobs in both the private and public sectors. Some of the graduates are pursuing their postgraduate studies in different fields of pharmacy in North American and Jordanian universities. The college is working now on developing the curriculum so as to maintain the high standards in pharmacy education. Also, the college employs the top notch students as teaching and research assistants. It then helps them to pursue their higher education abroad.

The students must complete a total of 1,440 hours of clerkship and training at community or hospital pharmacy.

2. B.Sc. in Pharmacy: Study Plan

An-Najah National University College of Pharmacy awards a B.Sc. degree in pharmaceutical sciences, after successful completion of 175 credit hours. Credit hours include "free" courses as well as compulsory and elective courses.

2 A. Compulsory courses- 59 (134 credits)

Course #	Course title	Credit hours	Prerequisite
21104	Mathematics for Pharmacy	3	-
22103	Physics for Pharmacy	3	-
22113	Physics for Pharmacy (Lab)	1	-
23101	General Chemistry I	3	-
23102	General Chemistry II	3	23101
23107	General Chemistry I (Lab)	1	-
23108	General Chemistry II (Lab)	1	23107
24101	General Biology I	3	-
24102	General Biology II	3	23107
24107	General Biology I (Lab)	1	-
24108	General Biology II (Lab)	1	24107
25202	Biostatistics	3	21104
27120	Introduction to Computer	3	-

52121	Principles of Accounting	3	21104
101321	Medicinal Chemistry I	3	-
101421	Medicinal Chemistry II	3	-
101481	Nutrition	2	-
102211	Organic Chemistry for Pharmacy I	3	23102, 23101
102212	Organic Chemistry for Pharmacy I (Lab)	2	23108
102213	Organic Chemistry for Pharmacy II	3	102211
102214	Organic Chemistry for Pharmacy II (Lab)	2	102212
102215	Analytical Chemistry for Pharmacy	3	23108, 23102
102216	Analytical Chemistry for Pharmacy (Lab)	1	23108
102217	Physical Pharmacy	3	23102
102218	Physical Pharmacy (Lab)	1	23108
102311	Pharmaceutics I	3	102217
102312	Pharmaceutics I (Lab)	1	-
102313	Pharmacy Legislations & Practices	1	23102, 23101
102314	Pharmacy Practice & OTC	1	23108
102315	Pharmacology I	3	102211
102317	Instrumental Analysis	3	102212
102321	Pharmaceutics II	3	23108, 23102
102411	Industrial Pharmacy	3	23108
102413	Pharmacology II	3	23102
102416	Biopharmaceutics and Pharmacokinetics	3	23108
102417	Biopharmaceutics and Pharmacokinetics (Lab)	1	102217
102511	Clinical Pharmacy	3	-
103331	Pharmacognosy	3	102213, 102214
103332	Pharmacognosy (Lab)	1	102214
103431	Phytochemistry	3	-
103432	Phytochemistry (Lab)	1	-
105201	Public Health and First Aid	3	-
105261	Human Anatomy	3	24108, 24102
105262	Human Anatomy (Lab)	1	-
105264	Parasitology	3	24108, 24102
105265	Parasitology (Lab)	1	24108
105311	Biochemistry I	3	102214, 2213
105312	Biochemistry I (Lab)	1	102214
105313	Biochemistry II	3	105311
105342	Medical Microbiology	3	24108, 24102
105343	Medical Microbiology (Lab)	1	24108
105345	Immunology	2	105343

105346	Drug Information and Dispensing	2	-
105362	Human Physiology I	3	105311
105363	Human Physiology I (Lab)	1	105312
105364	Human Physiology II	2	105362
105412	Clinical Biochemistry	3	102414
105423	Pathology	3	105362
105447	Toxicology	2	102315

2 B. Elective courses - 14 (30 credits)

Course #	Course title	Credit hours	Prerequisite
35347	Sociology of Medicine	3	-
71412	Clinical Psychology	3	-
22102	General Physics II	3	22103
22108	General Physics II (Lab)	1	22104
101422	Medicinal Chemistry III	3	101421
102412	Industrial Pharmacy (Lab)	1	102411
102414	Pharmacology II (Lab)	1	102413
105210	History of Pharmacy & Medicine	1	College approval
105211	Ethics of Medical Professions	2	College approval
105212	Advanced Clinical Pharmacy	2	102511
105213	Pharmaceutical Technology	2	102411
105215	Special Topics I	3	College approval
105216	Special Topics II	3	College approval
105217	Cosmetics	2	College approval

Course Descriptions (E=elective)

PHA22103 Physics for Pharmacy

This course covers a number of topics: units and dimensions; vectors, laws of motion; energy and power; electricity and magnetic forces, electrical fields and potentials, electric circuits; heat and its impact on gases and thermal properties of matter; vibrations and wave motion (in terms of description) electromagnetic waves (sound and light); lasers, absorption and release of rays; laser applications and microscopes.

MTH25202 Biostatistics

Topics covered in this course include classification of statistical data and methods of presentation; collection, organization and analysis of data; sampling; techniques in hypothesis; correlation and analysis of variance; simple linear regression, medical and biological applications on all of the above.

CSC27120 Introduction to Computer

Computer components: hardware and software; PC use, D.O.S., and Windows;

introduction to programming in Basic; on-line information resources, CD-Rom databases, programs and multimedia systems that can be used by pharmacists in their practices.

PHA101321 Medicinal Chemistry I

Concerned with the study of the physiochemical properties of drugs, their absorption, distribution, metabolism and elimination, this course also covers preservatives, disinfectants, anti-fungal drugs and antibiotics.

PHA101421 Medicinal Chemistry II

It is basic medicinal chemistry; the course covers topics in autonomic drugs, central nervous system, drugs and hormones.

PHA101422 Medicinal Chemistry III (E)

This course is an investigation into the structure/activity relationship and chemical aspects in all major groups of drugs. Introduction to new methods of drug synthesis and evaluation will also be taught.

PHA101481 Nutrition

Concerned with the relationship between nutrition and other sciences; food nutrition, and food analysis; sources of food and consumption; human body and digestive system, water metabolism; food energy; soluble and insoluble carbohydrates; fats and fat metabolism; proteins metabolism, vitamins, minerals, nutrient requirements in special conditions and disease situations.

PHA102211 Organic Chemistry for Pharmacy I

A study of chemical properties and reaction mechanisms of non-cyclic compounds, with an explanation of the nature of correlations in molecules.

PHA102212 Organic Chemistry for Pharmacy I (Lab)

This is a laboratory course designed to cover theoretical biochemical concepts. Students will learn practical techniques used in lab experiments. Experiments on separation techniques, identification of organic compounds of interest will be conducted.

PHA102213 Organic Chemistry for Pharmacy II

This course includes the study of cyclic, non-aromatic and aromatic compounds and their chemical reactions, types of displacement, reaction mechanisms and analytical methods of different types; identification of compounds, binary structure; the course is also a study of functional groups such as acids, and their derivatives, heterocyclic compounds, amines, carboxylic acid reactions; phenols, alkenes and reaction mechanisms of the aforementioned.

PHA102214 Organic Chemistry for Pharmacy II (Lab)

Building on the theoretical concepts of Biochemistry for Pharmacy I-102212 (Lab), experiments are based on foundations of chemical preparations such as those of Grignard, Freidel-Craft and Sand-Meyer techniques, in addition to condensation, oxidation and displacement reactions. All this is applied on compound preparation linked to

pharmaceutical compounds.

PHA102215 Analytical Chemistry for Pharmacy

This course covers some basic concepts in chemical analysis and their application in the pharmaceutical field; errors in chemical analysis; evaluation of analytical data in terms of accuracy and consistency; the course also covers gravimetric and titrimetric methods of analysis; theory of neutralization; titrations; precipitation titrimetry; complex-formation titrations; theory of molecular absorption spectroscopy; analytical separation by solvent extraction and an introduction to chromatographic methods.

PHA102216 Analytical Chemistry for Pharmacy (Lab)

An application of Chemistry 102215 with students conducting experiments in analytical chemistry labs. These experiments include treatment of analytical data, determination of acid content of vinegar, determination of purity of soda ash, determination of water hardness by using EDTA, determination of iron ore content of a razor blade; determination of vitamin C in dehydrated juice or in tablets; determination of sulphate by using absorption indicator; gravimetric determination of sulphate separation by paper chromatography, spectrophotometric methods of analysis: analysis of commercial hypochlorite solution.

PHA102217 Physical Pharmacy

This course covers six major topics: states of matter; thermodynamics; solutions of non-electrolytes; solutions of electrolytes; kinetics, and solubility and distribution phenomena. The course includes a considerable number of subtopics related to each of the six major topics.

PHA102218 Physical Pharmacy (Lab)

Experiments cover a number of topics: solubility and activity coefficient heat of solution; three component phase diagram; phase diagram of a binary liquid vapor system; Kinetics of the persulphate iodide reaction (effect of ionic strength or reaction rate); Kinetics of the hydrolysis of methyl acetate (first order reaction); Kinetics of the hydrolysis of hydrazones (specific acid catalysis); stability of aspirin; viscosity; absorption isotherms; electrolytic conduction; Clausius-claypron equation; partition coefficient, and determination of formation constant of I₂ complex.

PHA102311 Pharmaceutics I

This course covers several topics: different pharmaceutical calculations (including calculation of concentration, reductions and quantities) pharmaceutical solutions (isoosmosis ...); ways of calculating children's dosages; Latin abbreviations; methods of drug storage; introduction to pharmaceutical forms; ways of calculating date of expiry; ways of drug decomposition; drug stability; introduction to movement of drug in human body; methods of taking drugs.

PHA102321 Pharmaceutics II

Students are introduced to a number of topics: Pharmaceutical compounding principles of various dosage forms: solid, semi-solid and liquid dosage forms; selection of

ingredients, mechanisms of action; packaging, storage, closures and tests.

PHA102312 Pharmaceutics I (Lab)

This practical course aims at introducing students to basic pharmaceutical dosage forms: liquid, semi-solid, and solid types. The lab sessions involve the basic principles of compounding, preparation skills, and basics underlying the selection of formulating ingredients, packaging, labeling and storage conditions for final selection of finished products.

PHA102313 Pharmacy Legislation and Practices

This course is a study of laws and regulations related to all aspects of the profession of pharmacy, namely legal and ethical principles. Emphasis is placed on the evaluation of non-prescription medications and appliances.

PHA102314 Pharmacy Practice & OTC

This lab aims at introducing students to medications that can be dispensed to patients without prescription. These drugs include antacids, anthelmintics, antidiarrhea, laxative products, emetic and anti-emetic drugs; hemorrhoid products; cold, cough and allergy products; asthma products; analgesics and NSAIDS; vitamins and minerals; infant formula products; weight control products; menstrual products, dental products, insect sting and bite products; burns and sunburn products, skin products, infant products, foot care products. This will be in addition to answering questions raised by patients seeking self-treatment concerning symptoms, aspects of patient counseling in the safe and effective use of products dispensed to him/her and side effects of this class of drugs.

PHA102315 Pharmacology I

This course investigates into the pharmacokinetic properties. The course is also a study of all drugs affecting the human being's nervous system. Sedatives and hypnotics; anti-convulsants and migraine drugs will be discussed.

PHA102413 Pharmacology II

This course is a study of some drugs and their working mechanism. Drugs to be studied include anti-hypertensive drugs, asthma medication, rheumatoid arthritis treatments, NSAID'S and salicylates, autacoids, histamines and antihistamines, steroids, thyroid and antithyroid drugs, diabetes, insulin; estrogens and progestins; agents affecting calcification and bone fragility.

PHA102414 Pharmacology (Lab) (E)

This course is an application of pharmacological knowledge taken in Pharmacology 102413. Students will conduct selected experiments in a practical setting. They will also do presentation of commonly encountered groups of medications. Emphasis is placed on site and mechanism of action.

PHA102317 Instrumental Analysis

This course focuses on several modern methods used in chemical analysis by using advanced equipment that helps in making pharmaceutical analysis in quality control labs

as well as in research. Both identification and quantitative methods are described. Methods used include principles of UV-Visible spectrometry, IR, fluorescence, atomic absorption, flow injection, electrochemistry, in addition to different types of chromatographic separative methods of high performance gases and liquids. Other examples are GLC, HPLC and SFC.

PHA102411 Industrial Pharmacy

This course aims at introducing students to the world of pharmaceutical industry; principles and basis of good manufacturing in addition to unit operations preparation techniques that affect the manufacturing of various pharmaceutical dosage forms. Students also learn about preformulation tests, stability protocols and quality control and GMP regulations to be followed in pharmaceutical plants in order to produce products with satisfactory if not good quality and deliver these products in the required form and manner.

PHA102412 Industrial Pharmacy (Lab) (E)

This is a laboratory course and it aims at introducing students to the world of pharmaceutical industry in all its aspects. Students will work in an environment similar to that in a pharmaceutical plant, particularly in the research and development department. Experiments, in different topics, are designed to study many factors involved in the processing of products throughout their lifetime until production stages by using small scale equipment available in the lab. Of the experiments, students will conduct mixing, milling, granulation, tableting, capsule filling and quality control tests.

PHA102416 Biopharmaceutics and Pharmacokinetics

This course is a description of the bases of therapeutic drug monitoring by discussing the pharmacokinetics of drugs following intravenous administration, intravenous infusion, oral and/or extra vascular administration of drugs that undergo first-order and zero-order elimination kinetics, emphasizing one-compartment and two-compartment models. The basis of bioavailability and bioequivalence studies will be emphasized. This science is considered the basis of therapeutic drug monitoring.

PHA102417 Biopharmaceutics and Pharmacokinetics (Lab)

This is a workshop and a lab course. It is concerned with the application of pharmacokinetics parameters in addition to solution of some practical problems and pharmaceutical overlapping.

PHA102511 Clinical Pharmacy

This course covers the concepts of clinical and therapeutic effects, the role of pharmacist using clinical care modules on the following: cardiovascular system; respiratory system; infectious diseases; nervous system; endocrinological disorders, and gastrointestinal diseases.

PHA103331 Pharmacognosy

This course provides the students with basic knowledge about medicinal plants in terms of their types, ways of collection and storage, scientific names, parts used, uses of each

plant, active constituents, and mode of action.

PHA103332 Pharmacognosy (Lab)

This course is an application of theoretical knowledge in lab. Practical lab sessions will be conducted which involve microscopic, macroscopic and chemical tests used in the identification of crude drugs.

PHA103431 Phytochemistry

This course focuses on classification of medicinal plants, ways of identifying their chemical constituents, methods of separation. The course is also a study of physico-chemical properties; methods of structure determination (MS, NMR, IR, UV).

PHA103432 Phytochemistry (Lab)

This course is a practical study of natural chemical groups such as fluorides, glycosides, volatile and fixed oils; ways of their identification and evaluation according to accredited pharmaceutical rules (constitutions).

PHA105201 Public Health and First Aid

This course investigates principles of preventive medicine, and public safety; vulnerability to emergency situations; first aid procedures; mother and child health care. The course also examines communicable diseases and social medicine.

PHA105261 Human Anatomy

This course covers general anatomy (terminology, body organization and body tissues). This is in addition to skeletal, muscular, and cardiovascular, nervous, gastrointestinal, urinary, and genital systems.

PHA105262 Human Anatomy (Lab)

In the first half of the course, students will learn about dissection of heart, eye, kidney, brain, and lungs. In the second half, students will learn about the different types of tissues (epithelial, connective, muscular and nervous tissues) through slide study.

PHA105264, PHA 105265 Parasitology (Lab)

This course is concerned with the study of morphology, structure, diseases, and laboratory diagnosis of parasites of medical interest.

PHA105311 Biochemistry I

This is an introductory biochemistry course and it deals briefly with the biological compounds (carbohydrates, proteins and fats) in human body and their metabolism reactions, and the way the body gets energy. The course also covers enzymes, ways of controlling enzyme reactions and enzyme supporters.

PHA105312 Biochemistry I (Lab)

This course includes comprehensive range of basic experiments in various topics in biochemistry. These experiments include identification of carbohydrates, proteins, fats, vitamins. Different methods, namely chromatography (paper and thin layer) and enzyme assay, will be used. There will be also a study of the effect of different conditions on the

activity of enzymes.

PHA105313 Biochemistry II

This course is a study of all pathological changes that occur in human being's biological operations. The course also includes interpretation of clinical laboratory results and their relationship with the state of illness. There is also a study of changes in pH and its different influences.

PHA105342 Medical Microbiology

This course is a study of basic aspects of microbial genetics, structure, and metabolism of microorganisms; principle of immunology, with emphasis on diseases caused by microorganisms.

PHA105343 Medical Microbiology (Lab)

This lab course covers several topics: preparation of microbial growth culture; staining, metabolism, identification and anti-microbial susceptibility of microorganisms. There is also a study of principles of sterilization and disinfections and quantitative measurement of bacterial growth.

PHA105345 Immunology

This course focuses on immunology terminology and basic principles of immunology. Emphasis is placed on biological and biochemistry aspects of host resistance, immunity types of hypersensitivity and suggested treatment; body resistance to different types of diseases.

PHA105346 Drug and Information Dispensing

This course examines medical prescriptions, their types and how to deal with them; common pharmaceutical forms. The course also studies modern medications & their mechanism of work. Students also learn about retrieval and dissemination of drug information and common drug interactions.

PHA105362 Human Physiology I

This introductory course deals with the human body as separate systems. The students get an understanding of the mechanisms governing the function of different human organs. The following systems are studied in this course: central nervous system, cardiovascular system, skeletal system, respiratory system and renal system.

PHA105364 Human Physiology II

This course completes the study of function of different organs as separate systems. The following systems are studied: gastrointestinal tract, endocrine system, genital system and special senses.

PHA105363 Human Physiology (Lab)

This lab course is concerned with designed practical experiments to cover the theoretical course of the human physiology to guide students to reality of cell functions and organs of the body.

PHA105412 Clinical Biochemistry

This course teaches clinical application of biochemical aspects in the form of different lab interpretations and applications.

PHA105423 Pathology

This course deals with the basic knowledge in pathology of different disorders and their effects on body organs and systems.

PHA105447 Toxicology

This course involves teaching toxicity of drugs and their effects on central nervous system and cardiovascular system. Important environmental issues, insect stings and general and specific antidotes are also studied.

PHA105210 History of Pharmacy and Medicine (E)

This is a historical study of medicine and pharmacy throughout the ages. The course highlights the Muslim Arab scientists' contributions to these two fields.

PHA105211 Ethics of Medical Professions (E)

This course, as the title suggests, emphasizes the ethical principles upon which the medical professions and pharmacy in particular rest. The course looks at the nature and place of pharmaceutical services in society, and the moral standards and professionalism expected from a pharmacist.

PHA105212 Advanced Clinical Pharmacy (E)

This course is an in-depth clinical study of significant drug categories used in treatment at the primary care level. Emphasis is placed on adverse effects and drug-drug interactions and the task of selecting an appropriate medication for specific patients.

PHA105213 Pharmaceuticals Technology (E)

This course covers a number of special topics in the pharmaceutical field: new drug development; approval and registration processes of new drugs, and new drug delivery systems (transdermal, ophthalmic, aerosoles, ...). The course also surveys principles underlying drug design, mechanism of action, problems, and attempts of enhancement of delivery.

I-PHA105215 and II-PHA105216 Special Topics (E)

These courses are given under different titles. Offering of these courses largely depends on student's desire and the interest in keeping abreast of development in pharmacy. Topics of interest include heterocyclic chemistry; biochemistry, medicinal chemistry; clinical pharmacy pharmacy practice and therapeutics

PHA105217 Cosmetics (E)

Students in this course get acquainted with the basics of cosmetics preparation. They also study required specifications for cosmetic materials, mechanism of their effectiveness and influence. Students will get training on how to prepare some of these cosmetic materials according to standard specifications.

Faculty members:

Full Professor

Ibraheem Wahdan

Ph.D. in Electro-physiology (London, UK, 1975).

Associate Professors

Mohammed Hanoun

Ph.D. in Pharmaceutical Organic Chemistry (Croatia, 1980).

Raqi Shubetah

Ph.D. in Pharmaceutical Analytical Chemistry (UK, 1995).

Assistant Professor

Samar Musmar

MD., American Board certified, community health & Family Medicine (Florida, USA, 1995)

Mohammed Musmar

Ph.D. in Medicinal Chemistry and Pharmacognosy (Houston, USA, 1982).

Ansam Swalha

Ph.D. in Pharmacology and Toxicology (Texas, USA, 1998)

Waleed Sweileh

Ph.D. in Biomedical Sciences (Pharmacology) (Boston, USA, 2000).

Nidal Jaradat

Ph.D in Pharmacognosy and Pharmaceutical chemistry (Ukrain 2000)

Abed El-Naser Zaid

Ph.D in Pharmaceutical technology (Italy, 1998)

Instructors

Abeer Abu-Goush

M.Sc. in Pharmaceutical Technology (London, UK, 1997)

Omar Tabnjah

M.Sc. in Clinical Pharmacy (UK)

Teaching Assistants

Samah Jabi

B.Sc Pharmacy, (An-Najah University. Palestine, 2001

Asma' Hasan

B.Sc Pharmacy, (An-Najah University. Palestine, 1999

On academic Leave

Rowa' Ramahi

B.Sc Pharmacy, (An-Najah University. Palestine, 2001

COLLEGE OF LAW

Background

The College of Law, established in 1995, came in full harmony with the university's philosophy to serve the Palestinian people and as a response to the establishment of Palestinian National Authority institutions. At present, the faculty has 400 men and women students.

The objectives of the law program are three-fold: to qualify students to work as lawyers in both public and private sectors; to meet the needs of the Palestinian society and to spread legal awareness and education particularly in the field of exercising rights and basic freedom; to promote scientific research on law and to develop legal systems prevailing in the Palestinian society from the Ottomans' era to the Israeli occupation era.

B.A. degree program in Law

The College of Law awards a B.A. degree in Law. Students wishing to obtain a B.A. degree in Law must successfully complete 140 credit hours. These include university and college requirements: compulsory, elective and "free" courses.

College requirements (30 credits)

Course #	Course title	Credit hours	Prerequisite
53150	General Principles of Economics		-
111101	Introduction to Law	3	-
111102	History of Law	3	-
111103	Principles of Commercial Law	3	-
111104	Civil Law (sources of obligation)I	3	-
111105	Research Methodology	3	-
111106	Principles of Islamic Shari'a	3	-
112104	Principles of General International Law	3	-
112105	Law of Penalties (Public Law Dept.)	3	-
112106	Constitutional Law	3	-

Course descriptions

LAW111101 Introduction to Law

The purpose of this course is to introduce students to law, its nature, historical development, how its bases are drafted, the objectives, characteristics and sources of

these objectives; division of legal bases, their application and interpretation. Further, students will learn about theory right in terms of definition of right, illustration of its types, parties, subjects, sources, legal protection of this right and means of its protection.

LAW111102 History of Law

This course provides a historical view of the development of law since the days of Hammurabi, the Pharaohs and the Romans. The course traces the development of these laws, their most important foundations, the hows of their applications and circumstances leading to their development. The course will also explain the impact of these ancient laws, particularly the Roman Law, on modern laws. Then the course will move to the development of laws as a result of society development and its political and economic changes as well as the mutual influence among these factors. The course will finally introduce the student to the status of law in modern age starting from Napoleon's Law in the 19th century.

LAW111103 Principles of Commercial Law

This course teaches students the nature of commercial law, its goals & development, theory of merchandise, and commercial businesses and all other things pertinent to their properties and types.

LAW111104 Civil Law I (Sources of Obligation)

This course introduces the foundation and definition of civil law. It particularly defines individual right, right in rem and pecuniary right, sources of obligation. The course also defines contract, its conditions, condition for validity, types of contracts, contracting responsibility, individual will, detrimental act (illegal work) responsibility for individual acts on money or person. The course dwells also on responsibility for another's actions, responsibility for materials and affiliation, unjustified enrichment and prescriptions governing them.

LAW111105 Research Methodology

This course aims at teaching students how to use the library, how to document sources and references when they write academic papers. The course also teaches students how to collect data, analyze and classify them. In addition, the course introduces methods of research and technological resources used in research.

LAW111106 Principles of Islamic Shari'a I

Topics covered the course are the meaning of Islamic shari'a, its sources, definition of shari'a, religion, fiqh of ijtihad (individual interpretation), difference between shari'a and religion, major fiqh schools, general idea about ownership and contracts in terms of validity, void, illegibility, custodianship, role of custom, and fiqh bases.

LAW112104 Principles of General International Law

In this course, students will learn about the general theory of international law in terms of definition, development, people behind this law, its sources, main divisions particularly during times of peace and times of war. However, the course will emphasize international law during times of peace. Students will also learn about right and duties of

countries, international disputes and means of solving these disputes peacefully.

LAW112105 Law of Penalty (Public Law Dept.)

This section of Law of Penalty illustrates the common general rules for all crimes and its pillars without prejudice. This section mainly focuses on regional, self, and personal authorities (powers) for the Law of Penalty. Then it dwells on the reasons for allowing it, types of responsibility in terms of culprit, instigator and accomplice.

LAW112106 Constitutional Law

This course provides a definition of constitutional law, its different meanings, controlling process of the constitutionality of laws in all their types. The course also introduces different constitutional systems, ways of granting authority or power, elections, rights, individuals, public freedoms. The course also focuses on the state's three authorities, legislative, judiciary and the executive, separation among them, extent of each authority and its limits.

I. DEPARTMENT OF PRIVATE LAW

IA. Compulsory courses

Course #	Course title	Credit hours	Prerequisite
111101	Principle of Law	3	-
111102	History of Law	3	-
111103	Principles of Commercial Law	3	111101
111104	Civil Law I (Sources of Obligation)	3	111101
111105	Research Methodology	3	-
111106	Principles of Islamic Shari'a I	3	-
111201	Civil Law II (Rules of Obligation)	3	111104
111240	Personal Status Law II	3	111106
111250	Commercial Law I (Companies and Bankruptcy)	3	111101
111301	Commercial Law II (Commercial Papers & Banking Operation)	3	111101
111302	Civil Procedures Law	3	111201
111303	Labor Law	3	111101
111304	Evidence and Civil Procedures Law	3	111302
111311	Maritime Law	3	111101
111341	Personal Status Law III	3	111240
111401	Civil Law III (Nominal Contracts)	3	111201
111402	Private International Law	3	111101

IB. Elective courses

Course #	Course title	Credit hours	Prerequisite
111351	Personal Status Law for Non-Muslims	3	111101
111352	Commercial Contracts	3	111401
111403	Rights in Rem	3	111103
111452	Insurance Contracts	3	111101
111453	Commercial, Industrial and Intellectual Property	3	111103
111454	International Arbitration Law	3	111104
111455	Minor Contracts (Warranty, Proxies, Contracting)	3	111101
111456	Aviation Law	3	111101
111457	Legal Terms in English	3	111101
111458	Judiciary Applications	3	111101
111459	Fundamentals of Comparative Fiqh	3	111106

II. DEPARTMENT OF PUBLIC LAW

IIA. Compulsory courses (36 credits)

Course #	Course title	Credit hours	Prerequisite
112104	Principles of General International Law	3	111101
112105	Law of Penalty (Public Law Dept. I)	3	111101
112106	Constitutional Law	3	111101
112215	Law of Penalty (Public Law Dept. II)	3	112105
112225	Administrative Law	3	111101
112226	International and Regional Organizations	3	112104
112324	Public Finance and Taxes	3	111101
112325	Penal Procedures Trials Law	3	112215
112335	Law of Penalties (Private Law II)	3	112215
112348	Human Rights	3	112104
112425	Seminar	3	111105
112476	Administrative Judiciary III	3	111101

IIB. Elective courses

Course #	Course title	Credit hours	Prerequisite
112267	International Human Law	3	112104
112353	Palestinian Constitution	3	112106
112451	Comparative Law	3	112225
112474	Criminology and Penalty	3	112215
112475	Diplomatic Law	3	112104
112477	Legal Terms in French	3	111101
112478	Environment Legislation & Urban Planning	3	111101
112479	Mass Media and Press Laws in Palestine	3	-

IIC. Ancillary courses (from other colleges)

Course #	Course title	Credit hours	Prerequisite
27120	Introduction to Computer	3	-
51121	Principles of Administration	3	-
53150	General Principles of Economics	3	-
53315	Political Economics	3	53150
54121	Principles of Political Science	3	-
112471	Forensic Medicine	3	-

Course descriptions

LAW111201 Civil Law

This course is a study of the effects of obligation in terms of explaining optional implementation means, namely, payment, settling of accounts, unity of pecuniar; means of compulsory implementation, namely, real implementation, implementation through compensation; means of protecting execution, urgent case-direct and indirect trials, modified definitions of obligation effects, right to imprison..., conditions, terms and clearance impossibility of execution passing of time preventing from hearing law- suits.

LAW111240 Personal Status Law I

This course tackles two subjects: divorce and marriage. Topics covering marriage include definition, wisdom behind it, legality, engagement, elements of marriage contract, legal conditions for its completion, conditions tied to contract, effect of marriage contract on dowry, adequate support of wife, fair treatment of wife in case of polygamy; loyalty to husband and decision-making at home. In the second part of the course, students will learn about divorce, its divisions, khulu' (initiating divorce by wife), its prescriptions or rules; custody (of infant) and its rules, and kinship expenses.

LAW111250 Commercial Law (Companies and Bankruptcy I)

This course covers a number of topics: definition of commercial companies, their types, their dissolution, their divisions, the way of establishing them, their registration, administration (management) and liquidation. Further, the course provides definition of bankruptcy, its causes, conditions, types, position of law towards it, penalty imposed on bankrupt trader, in some cases, particularly when it's criminal bankruptcy.

LAW111301 Commercial Law (Commercial Papers and Banking Operations)

This course covers a number of topics: definition of commercial papers, their characteristics, types, policies (order bills), checks, establishment of commercial drafts and their exchange, guarantee of their payment and the expiration of obligation cited in them. In addition, the course tackles banks in terms of their definition, and their role in economy, development, in external and internal trade as well as loans, their conditions, interests and their kinds.

LAW111302 Civil Procedures Law

This course covers the implementation of civil procedures law, in terms of time and place, and the important principles on which the litigation system is based, formation of courts, degrees of litigation in these courts, including urgent litigation. The course also deals with the rules of jurisdiction, conflict of jurisdiction and its types, international jurisdiction of judiciary. Further, the course will examine lawsuit theory, and litigation procedures: bringing legal action, its conditions, notifying the appellee, trial proceedings, consideration of the case, aspects of its use, requests, motions of defense, intervention, adjournment of the lawsuit case and its termination, sentences and their types, determination of their effects and ways of appealing against them.

LAW111303 Labor Law

This course introduces Jordanian Labor Law. Topics covered include definition of the law, its historical development, its sources, contracts based on it, conditions for their validity, subsequent obligations on employer and employee, reasons for termination of an individual's work contract, collective labor contract, union organizations, ways of settling labor disputes with special reference to the most important rights, advantages and disadvantages of these unions.

LAW111304 Evidence and Civil Procedures Laws

This course covers two subjects. The first is evidence of proof: written evidence, testimony, confession, examination, experience, and oath according to rules pertinent to them and explained in the Civil Law and Evidence Law. The second is Procedures Law and this includes procedures department works, authority in charge of procedure, structure and specialization of the department, ways of compulsory implementation. The course, further, dwells on bonds, and the ways of implementing national and foreign judicial sentences. The course also highlights money, which cannot be confiscated, and executive confiscation and its effects.

LAW111311 Marine Law

This course introduces the students to the shipping legal system, identity, nationality & its registration. Students will also learn about ship ownership, rights in rem pertinent to it, its confiscation, reasons behind the action and the manner of its implementation. Further, students will learn about ship navigators, namely, ship proprietor, its captains, its maintenance officer. In addition, students will be introduced to contracts organizing marine activity: marine work contract, marine insurance contract, ship-rescue contracts, marine responsibility in terms of collision, insurance, rescue.

LAW111341 Personal Status (Inheritance, Endowment, Wills)

Topics covered in this course include legacy and rights pertinent to it, reasons and conditions for inheritance, men and women heirs, reduction of heirs' shares, distribution of remaining shares among heirs, greediness, and abolishment as well as kinship inheritance. Another topic covered in this course is the will in terms of its wisdom, pillars, conditions, void, retraction, acceptance, rejection and obligatory will. The last topic is the wakf (endowment). The course will look at its meaning, conditions and rules governing it.

LAW111351 Personal Status Law for Non-Muslims

Topics covered in this course are breast feeding, custody, inheritance and wills.

LAW111352 Commercial Contracts

The aim of this course is to explain the most prevalent commercial contracts: commercial sale contract, power of attorney contract, brokerage and commission contract, transportation contract. The course discusses each in terms of parties, terms of validity and effects and the important disputes resulting from these contracts.

LAW111401 Civil Law (Nominated Contracts III)

This course is a study of the most common contracts: Lease and sale contracts. The course will provide students with a definition of sale contracts, their characteristics, elements, rules, impacts and expiration. The course will discuss proprietor and tenant law.

LAW111402 International Law (Private)

This course begins with the definition of private international law, its sources, its nature, general theory of law conflict, analysis of evidence base, schools, concerning the theory of conflict of jurisdiction and types of this latter. The course also tackles the general theory of nationality in terms of its definition, its types, reasons for obtaining and losing it.

LAW111403 Civil Law (Rights in Rem)

This course is a study of two main branches of rights: original rights in rem, and dependent rights in rem. The course provides details about proprietorship rights, means of protection and restrictions on it. Then the course discusses specific types of ownership: public ownership, upper and lower ownership, common wall, apartment and floor ownership. The course will also dwell on reasons for acquiring property after death and reasons for ownership in case of life. The course ends with adjacency rules.

LAW111452 Insurance Contracts

This course introduces students to definition of insurance, its origin, its development, divisions, types and legal foundations on which it's based, guarantees (reserves and reinsurance), insurance characteristics, elements and effects and results of breaching an insurance contract.

LAW111453 Commercial, Industrial and Intellectual Property

This course provides a historical background about the origin of commercial, industrial and intellectual property, means of its protection at the international level (Paris Treaty), history of legislation, pertinent to it, during the Ottoman rule, the Jordanian rule; patent law, registration system, nature of patent right or intellectual property, ways of using and protecting it, fees, industrial models, rules governing trade names and titles, commercial and intellectual property, how to sell, and use rights to others.

LAW111454 International Commercial Law

This course covers a number of topics: concept of international arbitration law, its origin, development, its sources and its relationship with other laws. The course also includes a practical study of one of the sources of International Trade Law from international agreements and conventions.

LAW111455 Small Contracts (Proxy, Warranty and Contracting)

This course focuses on three civil contracts: proxy, warranty and contracting in terms of their elements, types, effects, and expiration. In the second type of contracts, the course will introduce students to meaning, elements, types and effects of the contract, particularly between the guarantor and the lender, and between the guarantor and the borrower. The course also shows how the guarantee expires. In the third type of

contracts, (contracting), the course will focus on its definition, the contractor's obligations and the employer's obligations, subcontracting work from within and expiration of contracting contract.

LAW111456 Aviation Law

This course is a study of air navigation. It begins with a definition of plane, its types and its legal status. Then, the course moves to air transportation, routes, and territory in the light of domestic law governing it. The course also discusses Warsaw Treaty on air transportation, liability of airliners according to national and international agreements. The course ends with a discussion of the Aviation Law concerning the responsibility when a plane accident occurs which may result in killing or injuring passengers or some of them and damaging or loss of their luggage.

LAW111457 Legal Terms in English

This course aims at enriching student's vocabulary in legal English (private law). Students will read legal texts and they are expected to write about them, discuss them and translate parts of these texts.

LAW111458 Judiciary Applications

This course deals with the practical aspects of civil, administrative and penalty laws. A few court cases will be chosen and students will be shown how lawsuits are brought to the court, and the court proceedings in different courts.

LAW111459 Fundamentals of Comparative Fiqh (Jurisprudence)

Topics covered in this course are definition of fiqh fundamentals, subjects, purposes, origin and sources. The course also discusses ways of publishing in fiqh & its classifications.

LAW112104 Principles of General International Law

This course mainly discusses the general theory of international law, its definition and development, law-making, its sources, and major divisions during times of war and peace. However, the course gives more emphasis to the role of law in times of peace. Students also learn about countries' rights and duties, international disputes and means of settling them.

LAW112105 Law of Penalty (Public Law Dept. I)

This section of Penalty Law discusses general rules common among all crimes and elements of these crimes. Further, the course tackles self, personal and territorial jurisdiction of penalty law. It also discusses the reasons for disclosure and the liability of culprit, instigator and accomplice.

LAW112215 Law of Penalty (Public Law Dept. II)

Topics covered in this course include penalty, in terms of its importance, objectives, divisions, types, completion of punishment and suspension of punishment execution; comparison between penalty and other types of punishments, exemption from punishment, reasons for light and strict punishment, precautionary measures / their concept, types and expiration.

LAW112225 Administrative Law I

This course looks at the definition of administrative law, its origin and sources. It examines public facilities and their elements, rules governing them, and public money.

LAW112226 International and Regional Organizations

This course is a study of both regional and international organizations in terms of development, history, types, and leaders. It is also a study of general theory of an international organization, its legal status and its role in the international community. International organizations considered are the UN, UNESCO, WHO, UNICEF, and other United Nations agencies. Regional organizations examined will include the Arab League, Organization of African Unity, and the Organization of American States.

LAW112267 International Human Law

This course introduces the law of war and how it developed starting from the second half of the 19th century. The course also examines the most important sources of this law: customary and conventional. The course, further, discusses the most important legal obligations of disputing parties and neutral states, and the duties of the occupying country towards the occupied region and its population. The course ends with an illustration of the characteristics of War Occupation Law and its shortcomings.

LAW112324 Public Finance and Taxes

This course includes a study of general foundations and bases organizing revenues, expenditures, public budget, and a practical study of it. The course is also a study of the principles of public finance, theory of taxes and its goals with emphasis on taxing regulations effective in the Palestinian areas. The course also highlights the role of taxes in striking the necessary balance between revenues and social justice.

LAW112325 Penal Procedures Law

This course begins with a definition of this law and its relationship with other laws particularly Law of Penalty. The course also explains the scope of procedure rules, different stages of penalty lawsuits & starting from preliminary investigation and its proceedings. The course will also study lawsuits resulting from crimes, public right lawsuits, parties involved, restrictions and reasons for their termination. In addition, the course teaches civil lawsuits resulting from penalty lawsuits in terms of their dependence on them, their conditions and effects. There is also a study of penalty judiciary in terms of its formation, and bases of its organization, proceedings of penalty courts and fundamentals, ways of providing evidence, types of sentences and ways of contesting them, both ordinary and extraordinary.

LAW112335 Law of Penalty (Private Law Dept. III)

This course deals with crimes against people (killing, injury, rape, disgracing someone's honor, etc ...) It also discusses crimes against property: robbery, embezzlement and fraud. It also dwells on bounced checks, elements of these crimes, penal differences among them, reasons for giving a light punishment and exemption from penalty.

LAW112348 Human Rights

This course will address human rights, history and development of these rights particularly after the WWII. The course illustrates types of human rights and their divisions, human rights implementation from international conventions, and the most important

guarantees for the implementation of human rights, public freedom, and mechanism of its implementation within the same country.

LAW112352 Administration Law II

This course addresses public jobs, and administrative decision in terms of its elements and bases governing it, in the light of abrogation and non-retroactivity. The course also examines administrative contracts in terms of their types and rules.

LAW112425 Seminar

In this course, students learn about the nature of writing a law paper and how to use legal style and legal terms in their writing. Students also learn about methods of research, styles of documentation, how to take notes, namely, quoting, summarizing and paraphrasing, and documentation of sources in text and at the end of papers.

LAW112451 Comparative Law

This course is a study of main legal systems prevailing in the world, namely, the Anglo-Saxon in Britain, and the US system. However, the course will also introduce the Latin system, as adopted by the French. It will also examine the Islamic Shari'a as an Islamic legal system, particularly in the early period of the Islamic state. These different legal systems should be seen as legal representation of European civilization and Islamic civilization. These systems also reflect political systems of governments/states concerned especially when it comes to constitutional, administrative, judiciary institutions. The course caps with some light on sources of legal base in these countries and features of legal thinking in those societies.

LAW112471 Forensic Medicine

This course is a study of death, what it means, its signs, its ways and types; disgracing one's honor, rape; injuries and ways of discovering them; identification, its types, the finger prints, places of their presence, ways of discovering them, forensic doctors and their specialties, instructions of public prosecution office concerning forensic medicine, techniques used in discovering forgery crimes, technical checking and its effect.

LAW112474 Criminology and Penalty

This course is a study of criminology in terms of its definition, its history, and its development. It is also a study of the link between criminology and Law of Penalty, factors behind individual and group criminal behavior and the different theories introduced around these factors.

LAW112475 Diplomatic Law

This course provides the student with an historical idea about the origin and development of the diplomatic law; it also discusses diplomatic immunity and privileges enjoyed by

the diplomatic corps, and consular corps people. Further, the course explains the development of the international conventions towards diplomats. The course ends with an examination of Vienna treaties of 1961 and 1963 which laid the modern legal foundations for Diplomatic Law, immunity and consular and diplomatic privileges.

LAW112476 Administrative Judiciary III

This course introduces administrative judiciary, traces its development and explains the principle of legitimacy, the laws of guaranteeing its implementation, and determining types of controlling the administration, particularly judiciary control, its types, its development and organization. The course will provide examples, namely, from Egypt, France and Jordan. Students will also be introduced to Supreme Court of Justice in Jordan, its specialization, lawsuit abrogation, its definition, its characteristics, conditions for its acceptance, aspects of its cancellation and its judgment.

LAW112477 Legal Terms in French (Public)

This course aims at enriching students' technical legal French terms. To this end, students will study legal texts in French. They are also expected to find meanings of legal terms, how to use them and how to translate some legal texts from the French into Arabic.

LAW112478 Environmental Legislations and Urban Planning

Students in this course will learn about local legislations aimed at protection of environment and prevention of pollution. The students will also learn about the environment, its elements, means of its protection and its sustainable development. Further, students will be introduced to international environmental laws particularly those related to water and natural resources. Pertaining to urban planning, students will learn about laws related to planning in both cities and villages, and different committees charged with planning, their powers and formation.

LAW112479 Mass Media and Press Laws in Palestine

This course is a study of laws pertinent to press, radio, T.V. news editing and publication; censorship of media and press freedom; legal restrictions relevant to them, legal measures which may be taken by executive authorities against newspapers and other mass media; journalists, legal system pertinent to grievances against these measures and rules.

FACULTY MEMBERS

Assistant Professors:

Ahmed Mubarak Al-Khalili	Ph. D. in Public Law, Political Systems and Constitutional Law, Cairo University, Cairo, Egypt, 1979.
Amin Dawas	Ph. D. in Private Law, Freeburg University, Switzerland, 1996.
Basel Mansour	Ph.D. In International law Warsaw State University, 1997
Ghazi Munwar Dweikat	Ph.D. in Public Law, University of Alexandria, Alexandria, Egypt, 1983.
Hassan Falah Safarinee	Ph. D. in Public Law, Cairo University, Cairo, Egypt, 1996.
Na'el Taha	Ph.D. Public Law, "Criminal Law", Moscow State University, Moscow, Russia, 1995.
Mohammed Sharaqa'	Ph. D. in Political Science, University of Paris, Dauphine, France, 1996.
Ghassan Omar	Ph.D. in Private Law. (Commercial Law) People Friendship University of Russia, Moscow, Russia, 1999
Hussein Mashaqi	Ph.D. in Private Law (Merchantile Law) Arab league Studies, Cairo, Egypt, 2001

COLLEGE OF MEDICINE

Introduction:

The College of Medicine was established in 2000 as a joint college, involving Al-Quds University, Al-Azhar University, and An-Najah University, to meet the increasing demand for clinical medicine in Palestine and the Arab East. The college prepares its students for careers in clinical medicine by providing them with a thorough understanding of human body organs, drugs and diseases. Graduates of this college are expected to be professional physicians who provide effective patient health care in times of emergency, such as ours.

The curriculum of the college encourages interaction between physicians and other healthcare professionals such as pharmacists and nurses. The college makes arrangements with local hospitals to allow its students to undertake clinical medicine internships upon completion of certain courses. The human medicine curriculum offers a six-year program leading to a B.Sc. in medicine. In the first stage, students join An-Najah and receive instruction on basic sciences. Then, in the pre-clinic stage, students move to the headquarters of the college at Al-Quds University. In the clinical stage, students complete it at hospitals, and at government and non-governmental primary health-care centers. In its study plan, the college adopts a partial intervention system directed towards the community.

Admission Requirements:

The college admits students on the basis of their grades in the high school leaving certificates. The college takes into consideration geographic distribution of students. It only accepts top-notch applicants. Admission committees, representing the three universities, scan applicants, conduct interviews with those short-listed, and administer to them a placement exam. Finally, they select the best candidates.

NEW 6-YEAR PLAN

(APPROVED BY THE COLLEGE COUNCIL ON THE 12TH OF DECEMBER 2000)

Requirements for Graduation:

For graduation, students need to finish 259 credit hours:

I-University Requirements: (23 cr)

Compulsory Courses: (17 cr)

0400100	Arabic Skills	3 cr
0400110	English Skills	3 cr
0400120	Jerusalem Through History	2 cr
0400121	Nature & Environment	2 cr
0400123	World Civilization	2 cr
0400124	Logical Thinking	3 cr

Course #	Course title	Credit hours	Hours per week		Prerequisite
			Theory	Lab.	

Elective Courses (6 cr)

Recommended:

0400132	Psychology	3 cr
0400123	Sociology	3 cr

II-Pre-Medical Courses: (31cr)

0303101	Computer	3 cr
0304101	General Chemistry	
0304102	Organic Chemistry	
0306101	Mathematics	3 cr
0601101	Biology	4 cr
0601150	Medical Physics	3 cr
0601160	History of Medicine	1 cr
0601210	English Medical Expressions	2 cr
0601225	Human Genetics	2 cr
0601226	Cell Biology	3 cr
0601227	Biostatistics	2 cr

III-Pre-Clinical Requirements: (76 cr)

0602100, 0602200	Histology	4 cr
0602101, 0602201	Anatomy	9 cr
0602102	Embryology	2 cr
0602103, 0602203	Medical Physiology	9 cr
0602104, 0602204	Biochemistry	8 cr
0602122	Medical Ethics	1 cr

0602123	First Aid & Patient Encounter	1 cr
0602236, 0603136	Neuroscience	5 cr
0603104, 0603204	Immunology	4 cr
0603105, 0603205	Microbiology	7 cr
0603107, 0603207	Pathology	10 cr
0603108, 0603208	Pharmacology	8 cr
0603134, 0603234	Public Health	5 cr
0603209	Parasitology	1 cr

IV-Clinical Requirements: (129 cr)

0604100, 0604200	Introduction to Clinical Skills	8 cr
0604102, 0604202	General Surgery	12 ch
0604103	Medical Imaging	2 ch
0604104, 0604204	Neurology & Clinical Neuroscience	4 ch
0604300	Community Medicine	4 ch
0604301	Rehabilitation Medicine	2 ch
0605111, 0605211	Obstetrics & Gynecology	8 ch
0605112, 0605212	Pediatrics	8 ch
0605113, 0605213	Psychiatry	6 ch
0605114	Orthopedics	3 ch
0605115	Urology	2 ch
0605116	Cardiac Surgery	1 ch
0605118	Clinical Pathology	2 ch
0605214	Neurosurgery	2 ch
0605215	E.N.T	2 ch
0605216	Ophthalmology	2 ch
0605217	Dermatology	2 ch
0606101, 0606201	Internal Medicine (Senior)	8 ch
0606102, 0606202	General Surgery (Senior)	8 ch
0606111, 0606211	Obstetrics & Gynecology (Senior)	6 ch
0606112, 0606212	Pediatrics (Senior)	6 ch
0606113	Family Medicine	4 ch
0606114	Emergency Medicine	2 ch
0606215	Anesthesia / ALCS	2 ch

GRADUATION PLAN

(APPROVED BY THE COLLEGE COUNCIL ON THE 12TH OF DECEMBER 2000)

1- FIRST YEAR: (PRE-MEDICAL)

First Semester		
Course #	Course title	Credit hrs
0304101	General Chemistry	4
0306101	Mathematics	3

0400110	English Skills	3
0400122	Islamic Culture	2
0601101	Biology	4
0601150	Medical Physics	3
	Total	19
Second Semester		
0303101	Computer	3
0304102	Organic Chemistry	4
0400100	Arabic Skills	3
0601210	English Medical Expressions	2
0601225	Human Genetics	2
0601226	Cell Biology	3
0601227	Biostatistics	2
	Total	19
Summer Semester		
0400141	Psychology	3
0400151	Sociology	3
0601160	History of Medicine	1
	Total	7

2-SECOND YEAR: (PRE-CLINICAL)

First Semester

Course #	Course title	Credit hrs
0602100	Histology I	2
0602101	Anatomy I	5
0602102	Embryology	2
0602103	Medical Physiology I	4
0602104	Biochemistry I	4
0602122	Medical Ethics	1
0602123	First Aid & Patient Encounter	1
	Total	19

Second Semester

0602200	Histology II	2
0602201	Anatomy II	4
0602203	Medical Physiology II	5
0602204	Biochemistry II	4
0602208	Endocrinology	2
0602236	Neuroscience I	2
	Total	19

Summer Semester

0400120	History of Jerusalem	2
0400121	Nature & Environment	2

0400123	World Civilization	2
0400124	Logical Thinking	3
	Total	9

3-THIRD YEAR: (PRE-CLINICAL)

First Semester

Course #	Course title	Credit hrs
0603104	Immunology (1)	2
0603105	Microbiology (1)	3
0603107	Pathology (1)	5
0603108	Pharmacology (1)	4
0603134	Public Health (1)	2
0603136	Neuroscience (2)	3
	Total	19

Second Semester

0603204	Immunology II	2
0603205	Microbiology II	4
0603207	Pathology II	5
0603208	Pharmacology II	4
0603209	Parasitology	1
0603234	Public Health II	3
	Total	19

4-FOURTH YEAR: (Clinical)

First Semester

Course #	Course title	Credit hrs
0604100	Introduction to Clinical Skills	4
0604101	Internal Medicine	6
0604102	General Surgery	6
0604103	Medical Imaging	2
0604104	Neurology & Clinical Neuroscience	2
	Total	20

Second Semester

0604200	Introduction to Clinical Skills	4
0604201	Internal Medicine	6
0604202	General Surgery	6
0604204	Neurology & Clinical Neuroscience	2
	Total	18

Summer Semester

0604300	Community Medicine	4
0604301	Rehabilitation Medicine	2

Total

5-Fifth Year: (Clinical)

First Semester

Course #	Course title	Credit hrs
0605111	Obstetrics & Gynecology	4
0605112	Pediatrics	4
0605113	Psychiatry	3
0605114	Orthopedics	3
0605115	Urology	2
0605116	Cardiac Surgery	2
0605118	Clinical Pathology	1
	Total	19

Second Semester

0605211	Obstetrics & Gynecology	4
0605212	Pediatrics	4
0605213	Psychiatry	3
0605214	Neurosurgery	2
0605215	ENT	2
0605216	Ophthalmology	2
0605217	Dermatology	2
	Total	19

Summer Semester

0605333	Electives	8
	Total	8

6-Sixth Year: (Clinical)

First Semester

Course #	Course title	Credit hrs
0606101	Internal Medicine (Senior)	4
0606102	General Surgery (Senior)	4
0606111	Obstetrics & Gynecology (Senior)	3
0606112	Pediatrics (Senior)	3
0606113	Family Medicine	4
0606114	Emergency Medicine	2
	Total	20

Second Semester

0606201	Internal Medicine (Senior)	4
0606202	General Surgery (Senior)	4
0606211	Obstetrics & Gynecology (Senior)	3
0606212	Pediatrics (Senior)	3
0606214	Forensic Medicine	3

0606215	Anesthesia / ALCS	2
	Total	19

Classification of Pre-Clinical Courses

ANATOMY: (15 cr)

(0602100)- Histology I		2 cr
(0602200)- Histology II	2 cr	
(0602101)- Anatomy I	5 cr	
(0602201)- Anatomy II	4 cr	
(0602102)- Embryology	2 cr	

PHYSIOLOGY: (9 cr)

(0602103)- Medical Physiology I	4 cr
(0602203)- Medical Physiology II	5 cr

NEUROSCIENCE: (5 cr)

(0602236) Neuroanatomy- Neuroscience I	2 cr
(0603136) Neurophysiology - Neuroscience II	3 cr

BIOCHEMISTRY: (10 cr)

(0602104)- Biochemistry I	4 cr
(0602204)- Biochemistry II	4 cr
(0602208)- Endocrinology	2 cr

MICROBIOLOGY: (12 cr)

(0603105)- Microbiology I	3 cr
(0603205)- Microbiology II	4 cr
(0603104)- Immunology I	2 cr
(0603204)- Immunology II	2 cr
(0603209)- Parasitology	1 cr

PHARMACOLOGY: (8 cr)

(0603108)- Pharmacology I	4 cr
(0603208)- Pharmacology II	4 cr

PATHOLOGY: (10 cr)

(0603107)- Pathology I	5 cr
(0603207)- Pathology II	5 cr

PUBLIC HEALTH: (5 cr)

(0603134)- Public Health I 2 cr
 (0603234)- Public Health II 3 cr

CLINICAL ASPECTS: (2 cr)

(0602122)- Medical Ethics 1 cr
 (0602123)- First Aid & Patient Encounter 1 cr

Classification of Clinical Courses**INTERNAL MEDICINE: (20 cr)**

(0604101, 0604201)- Internal Medicine
 (0606101, 0606201)- Internal Medicine (Senior) 8 cr

GENERAL SURGERY: (20 cr)

(0604102, 0604202)- General Surgery 12 cr
 (0606102, 0606202)- General Surgery (Senior) 8 cr

OBSTETRICS & GYNECOLOGY: (14 cr)

(0605111, 0605211)- Obstetrics & Gynecology 8 cr
 (0606111, 0606211)- Obstetrics & Gynecology (Senior) 6 cr

PEDIATRICS: (14 cr)

(0605112, 0605212)- Pediatrics 8 cr
 (0606112, 0606212)- Pediatrics (Senior) 6 cr

Introduction to Clinical Skills (0604100, 0604200) 8 cr
 Medical Imaging (0604103) 2 cr
 Neurology & Clinical Neuroscience (0604104, 0604204) 4 cr
 Community Medicine (0604300) 4 cr
 Rehabilitation Medicine (0604301) 2 cr
 Psychiatry (0605113, 0605213) 6 cr
 Orthopedics (0605114) 3 cr
 Urology (0605115) 2 cr
 Neurosurgery (0605214) 2 cr
 E.N.T (0605215) 2 cr
 Ophthalmology (0605216) 2 cr
 Dermatology (0605217) 2 cr
 Family Medicine (0606113) 4 cr
 Clinical Pathology (0606114) 2 cr
 Anesthesia / ALCS (0606215) 2 cr
 Cardiac Surgery (0605116) 1 cr

Emergency Medicine (0606123, 0606223) 2 cr
Forensic Medicine (0606214) 3 cr
Electives (0605333) 8 cr

Course Descriptions:

HUM 0601101 BIOLOGY

This is an elementary course in general biology designed to provide medical students with basic biological principles and understanding of various biological processes governing life. The topics include the structure and function of macromolecules, flow and transformation of energy, structure and function of sub-cellular organelles, human systems and their function and basic knowledge in genetics, histology and microbiology. The course has one credit hour lab.

HUM 0601150 Medical Physics

Applications of physics to medicine and medical instrumentation. Topics include bio-mechanics, sound and hearing, pressure and motion of fluids, heat and temperature, electricity and magnetism in the body, optics and the eye, biological effects of light, use of ionizing radiation in diagnosis and therapy, radiation safety and medical instrumentation.

HUM 0601160 History of Medicine

This course introduces students to the importance of the medical profession and the changes in medical education due to cultural and economic variations throughout history and different civilizations. It also emphasizes the role of Islamic culture in medicine in addition to medicine in Palestine during the last century.

HUM 0601210 English Medical Expressions

This course introduces prefixes, suffixes and word roots used in the language of medicine. Topics include medical vocabulary and the terms related to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell and define medical terms as related to selected body systems and their pathological disorders.

HUM 0601225 Human Genetics

This course provides students with comprehensive view of the science of genetics. It covers the history and development of genetics, structure and function of genes, chromosomes and their anomalies, patterns of single gene inheritance, types and mechanisms of mutations and tools of human molecular genetics.

HUM 0601226 Cell Biology

This course introduces students to the basic structure and function of sub-cellular organelles, the various methods and techniques used to study cells, cell growth, cell division and cell signaling.

HUM 0601227 Biostatistics

This course introduces students to descriptive statistics, box plot, stem-leaf plot, probability, Bayes theorem, binomial, Poisson and normal distribution, central limit theorem, point and interval estimation, one-sided confidence interval, one and two sample inference, sign test, categorical data, regression and correlation and one-way analysis of variance and vital biostatistics.

HUM 0602100, 0602200 Histology

This course is a study of general histology and organology with emphasis on human material. Grade is assigned at the end of the second semester.

HUM 0602101, 0602201 Anatomy

This course is a study of the gross anatomical structure of the human body by means of complete dissection supplemented by lectures and the study of cross sections. Grade is assigned at the end of the second semester.

HUM 0602102 Embryology

This course begins with a review of human embryology from fertilization to the end of the fetal period. Topics include current concepts in mammalian morphogenesis applied to the development of various organ systems, the principles of teratology; mechanisms of malformation and the aetiology and pathogenesis of some of the more common human congenital abnormalities.

HUM 0602103, 0602203 Medical Physiology

This two-semester course provides students with basic aspects of medical physiology "cardiovascular, pulmonary, renal, gastrointestinal and reproduction", in addition to principles of general physiology and the control of different organs and the coordination among them. Special emphasis will be on water, electrolyte and acid-base balance, body responses and adaptation to various stress conditions and physiological disorders. The course includes a one-credit hour lab. covering all the systems. Grade is assigned at the end of the second semester.

HUM 0602104, 0602204 Biochemistry

Integrated functions of the human body is considered ranging widely from cellular to higher organ-system levels. This course will cover the molecular composition of living cells, the chemical reactions that biological components undergo, the regulation of these reactions and the nutrients needed by the living cells. The course material covers bioenergetics and intermediary metabolism of carbohydrates, lipids and proteins and their enzymatic regulation. It is a fundamental biological and medical science course that provides an understanding of cell biology, microbiology, nutrition, pharmacology, pathology and physiology at the molecular level. The course has one credit hour lab. Grade is assigned at the end of the second semester.

HUM 0602208 Endocrinology

This course covers physiological and biochemical principles of the endocrine system, the

main structures of the different groups of hormones, how they are synthesized and metabolized, their release and mechanisms of action, in addition to the main functions of individual hormones.

HUM 0602122 Medical Ethics

This one-credit hour course is offered to second year students. It deals with fundamental ethical principles underlying medical practice. Ethical aspects of decision-making are discussed with special emphasis on moral, cultural and religious issues, in addition to confidentiality and respectability in patient management.

HUM 0602123 First Aid & Patient Encounter

This is a one-week introductory course offered to second-year medical students. It is designed to introduce students to patients and the hospital environment including the different departments and facilities. Students are also given a brief exposure to first aid.

HUM 0602236, 0603136 Neuroscience

This course will provide students with basic knowledge in neuroscience. The first part will cover neuroanatomical aspects of the functional structures of the nervous system, blood circulation and CSF. The second part includes neurophysiology and neurochemistry and covers the autonomic and somatic nervous systems, somatic sensation and sense organs, motor system and brain complex functions. Life cycle of neurotransmitters and synaptic integration, in addition to basic mechanisms of neurological diseases.

HUM 0603104, 0603204 Immunology

This is a two-semester course that concentrates on the basic and clinical science of the immune system and its relationship to other sciences and biological systems of mammals. The first part will concentrate on function-structure relationship of the immune system and its components such as the lymphoid tissue and cells, as well as the development and function of the immune system. The second part concentrates on the clinical science of the immune system and its role in the prevention, causation and diagnosis of human diseases such as cancer and autoimmune diseases. Grade is assigned at the end of the second semester.

HUM 0603105, 0603205 Microbiology

This is a two-semester course in basic and medical microbiology. The first part introduces medical students to basic concepts in microbiology including bacteriology, virology, mycology and parasitology. The second part concentrates on medical microbiology and provides core knowledge of infectious disease processes affecting each organ system, as well as working knowledge of the appropriate clinical laboratory investigations. The course has one credit hour laboratory, which covers a variety of microbiological and immunological techniques, with experiments designed to illustrate major concepts of bacteriology, virology, mycology and immunology.

HUM 0603107, 0603207 Pathology

This is a two-semester course which covers the principles of the discipline of pathology. Disease is presented by the organ system. Instruction includes lectures, demonstrations,

group discussions, laboratories and autopsy participation. Grade is assigned at the end of the second semester.

HUM 0603108, 0603208 Pharmacology

This course introduces medical students to the pharmacological concepts of drugs and other xenobiotics action. The classification, mechanism of action, therapeutic uses and toxic effects of pharmacological agents will be stressed. Discussion of representative samples of major drug classes will be emphasized, and treatment modalities, whenever appropriate, will be presented. This basic course is planned to assist the student, via lectures, clinical correlative discussions and independent study, to be able to understand pharmacological therapy in the clinical phase of medical education. Grade is assigned at the end of the second semester.

HUM 0603134, 0603234 Public Health

This is a one-hour course offered to third-year students. Dimensions of personal and environmental health and their relationship to social, economic, psychological and political factors, measurements and indices of community health status. are Considered Theoretical framework for viewing organizational issues in the delivery of health services is also discussed.

HUM 0603209 Parasitology

This is a concise study of medically important parasites with emphasis on regional parasites, their biology in relation to human disease and its laboratory diagnosis.

HUM 0604100, 0604200 Introduction to Clinical Skills

This is an eight-week introduction course in both internal medicine and general surgery. It serves as a transition for students from the basic medical sciences to clinical medicine. Students are introduced to patients and exposed to hospital environment under direct supervision of specialists in medicine and surgery. Emphasis is given to patients, history taking and clinical examination.

HUM 0604101, 0604201 Internal Medicine (Junior)

This is a basic medicine clerkship offered to fourth-year students. It serves as a prerequisite for most other courses and clerkships. Students participate in the care of hospitalized patients to refine their skills of history taking and physical examination and to learn how to care for the acutely ill. Instruction includes ward rounds, seminars, conferences and didactic lectures. Grade is assigned at the end of the second semester.

HUM 0604102, 0604202 General Surgery (Junior)

This course is offered to fourth- year students. It is designed to introduce students to the diagnosis and management of surgical problems. A comprehensive program is offered that includes instruction in the physiological basis of surgical care, differential diagnosis and decision making, and the basic principles of surgical management. Further, there will be active participation in the care of inpatients and outpatients in addition to attendance and scrubbing in the operating rooms which provide practical experience in the application of surgical skills. Grade is assigned at the end of the second semester.

HUM 0604103 Medical Imaging

This is a two-credit hour course. It is designed to familiarize students with the interpretation of medical images including chest radiographs, abdominal films and bone films in addition to introduction to ultra-sound, C-T Scan and MRI. Emphasis is given to case studies and to correlation between radiographic findings and clinical data. Students also become acquainted with the working of the radiology department and observe performance of a variety of diagnostic procedures. Grade is assigned at the end of rotation.

HUM 0604104, 0604204 Neurology & Clinical Neuroscience

This is a four-week clerkship offered to fourth-year students. Students will learn how to take history and perform clinical examination and will be involved in the evaluation and treatment of neurological diseases. Instruction includes care of patients in the wards and out-patient clinics under supervision, case discussions and seminars in addition to didactic lectures. Grade assigned at the end of the second semester.

HUM 0604300 Community Medicine

This is a four-week course offered to fourth-year students. It is designed to introduce students to the practice of community medicine. Students rotate into different clinics and sites including ante-natal care, well-baby and mother, immunization, food processing and handling and industrial medicine. They also attend didactic lectures and group discussions. Grade is assigned at the end of rotation.

HUM 0604301 Physical and Rehabilitation Medicine

This is an introductory two-week clerkship offered to fourth-year students. Students are given basic instruction in physical therapy and rehabilitation medicine. They are involved in inpatient management of general rehabilitation patients including those who suffer from traumatic brain and spinal cord injuries, strokes, various neuro-muscular disabilities and amputees. Students may also have an opportunity to study life style of outpatients and investigate community resources for the disabled. Grade is assigned at the end of rotation.

HUM 0605111, 0605211 Obstetrics & Gynecology (Junior)

This is an introductory course offered to fifth- year students. Students are exposed to the care of adult and adolescent female patients. They are taught how to take history and perform clinical examination and are involved in the diagnosis and management of obstetric and gynecological problems. Instruction is given during ward rounds, outpatient clinics, delivery and operating rooms in addition to didactic lectures and seminars. Grade is assigned at the end of the second semester.

HUM 0605112, 0605212 Pediatrics (Junior)

This course is offered to fifth-year students. It is a general introductory inpatient and outpatient pediatric clerkship. It is designed to expose students to child care. Emphasis is on history taking and physical examination. Students are exposed to the environment of child care. Instruction includes ward rounds, outpatients, seminars and didactic lectures.

Grade is assigned at the end of the second semester.

HUM 0605113, 0605213 Psychiatry

This course is offered to fifth-year students. Students are given primary responsibility under supervision for diagnosis and care of patients at Bethlehem Psychiatric Hospital. Emergency room, crisis intervention, familiarity with psychopharmacology and short term hospitalization are emphasized. The focus is on improving the skills on approach to patients and developing an interviewing style and content appropriate to psychiatric patients. Grade is assigned at the end of rotation.

HUM 0605114 Orthopedics

This course is offered to fifth-year students. It teaches students how to take orthopedic history and perform physical examination of the musculo-skeletal system. Students are also expected to learn how to diagnose and treat common adult orthopedic problems. Grade is assigned at the end of the second semester.

HUM 0605115 Urology

This clerkship is offered to fifth- year students. Students are taught how to take urological history and perform examination of the urogenital system. Instruction involves ward rounds, outpatient clinics, seminars and lectures on the diagnosis and treatment of common urological problems. Grade is assigned at the end of the second semester.

HUM 0605116 Cardiac Surgery

This course is offered to fifth-year students. This is one week of basic introduction to cardiac and thoracic surgical diseases. Students attend ward rounds, seminars and outpatient clinics and observe in the operating rooms and cardiac intensive care unit. They are taught basic principles of cardiac and thoracic surgery including pre-operative evaluation and post-operative care of patients. Grade is assigned at the end of the second semester.

HUM 0605118 Clinical Pathology

This course is offered to fifth-year students. It provides in-depth discussions in haematology, clinical chemistry, urinalysis, cytology and fluid &, electrolyte and acid-base balance. Interpretation of clinical pathological data is a primary component. Students are expected to perform various laboratory tests with correct interpretation of the results. Grade is assigned at the end of the second semester.

HUM 0605214 Neurosurgery

This is a two-week clerkship offered to fifth-year students. It is designed to provide students with an overview of clinical neuro-surgery. The emphasis is on applying knowledge gained in neuro-anatomy and neuro-physiology to clinical problems. It also acquaints students with diagnostic, operative treatment and post-operative care of neuro-surgical patients.

HUM 0605215 E.N.T

This two-week clerkship is offered to fifth-year students. It gives students the basic

fundamental knowledge of ear, nose and throat diagnostic principles. Students are exposed to common ENT problems that face the primary health care physician. Grade is assigned at the end of the second semester.

HUM 0605216 Ophthalmology

This is a two-week clerkship offered to fifth-year students. It is designed to introduce students to the principles of eye diseases. Students are taught how to perform ophthalmic examination and how to recognize common eye diseases. Grade is assigned at the end of the second semester.

HUM 0605217 Dermatology

This is a two-week clerkship offered during the fifth year. It is designed to give students broad clinical experience in skin diseases. Emphasis is on outpatient diagnosis and treatment of common skin conditions and the cutaneous manifestations of systemic diseases. Grade is assigned at the end of the second semester.

HUM 0605333 Elective

This is an eight-week clerkship offered to fifth-year students during summer. Arrangements are made for students to travel to a country of their choice where they spend the period of clerkship in specialty/ specialties of their choice in a teaching hospital. It is designed to introduce students to medical practice in a different country. The aim is to expose students to a new environment, culture, medical setup and a different way of medical approach. This will widen their horizons and open new channels of communication in the future.

HUM 0606101, 0606201 Internal Medicine (Senior)

This course is offered to sixth-year students. Emphasis is placed on acquiring skills and attitudes desirable from a compassionate and an understanding physician. Students record histories, physical examinations and laboratory data together with the diagnosis and treatment plans. They are taught how to develop sound clinical reasoning and responsibility for full time involvement in patient care including night calls. Each student works with and is supervised by a resident and attending staff. Grade is assigned at the end of the second semester.

HUM 0606102, 0606202 General Surgery (Senior)

This is an eight-week clerkship offered to sixth-year students. This is designed to give students the chance to improve their skills of history taking and physical examination and provides them with clinical exposure in the evaluation and treatment of a wide variety of surgical diseases. Emphasis is placed on teaching students to recognize and manage basic clinical problems. Students function as active members of the surgical team and follow patients both pre-operatively and during the post-operative period. They attend ward rounds, seminars, outpatient clinics, operations and participate in night duties under supervision of surgical residents. Grade is assigned at the end of the second semester.

HUM 0606111, 0606211 Obstetrics & Gynecology (Senior)

This is a six-week clerkship offered to sixth-year students. This is designed to provide students with the skills and knowledge needed to care for patients with common

gynecological problems, the wellwoman examination and pregnancy from prenatal care through delivery and post-partum. Emphasis is placed on history and physical examination and the management of pregnancy and vaginal delivery and common gynecological procedures. Students attend ward rounds, seminars, out-patient clinics, labour and delivery and operating rooms. Grade is assigned at the end of the second semester.

HUM 0606112, 0606212 Pediatrics (Senior)

This is a six-week clerkship offered during the sixth year. Students will improve their skills in history taking, physical examination and problem solving appropriate for children of various ages. Emphasis on differential diagnosis and therapeutic approaches to common pediatric problems in general wards, pediatric intensive care units and out-patient clinics. Students participate in daily follow-up of patients and in night duties. Grade is assigned at the end of the second semester.

HUM 0606113 Family Medicine

This clerkship is offered to sixth-year students. Emphasis on common problems in ambulatory primary care, bio-psychosocial issues, preventive care, and introduction to the role of the primary care physician. Sites include primary care clinics all over the country. Grade is assigned at the end of the second semester.

HUM 0606114 Emergency Medicine

This clerkship is offered to sixth-year students. It exposes students to various aspects of management of acutely ill patients in an emergency department. It provides students with the opportunity to deal with an undifferentiated patient population. Emphasis is placed on handling emergencies, ability to prioritize patient care and exposure to new diagnostic and management skills. Grade is assigned at the end of the second semester.

HUM 0606214 Forensic Medicine

This course is offered to sixth-year students. This is a specialized area of pathology, which not only deals with the effects of disease, particularly its role in sudden death, but also examines the effects of various external agents (e.g. firearms, poisons, blunt trauma, etc) on the human body. Also, the course will discuss situations requiring notification of the coroner, autopsy consents, death certification and steps taken by a medical expert in preparing for court. Grade is assigned at the end of the second semester.

HUM 0606215 Anaesthesia / ALCS

This is a two-week clerkship offered during the sixth year. It is designed to expose students to the varieties of practice available in anaesthesia and the application of basic knowledge in pharmacology and physiology in clinical situations. It also prepares students for the management of victims of cardiac arrest. Students will acquire the knowledge and skills necessary for resuscitation of critically ill patients. Grade is assigned at the end of the second semester.

FACULTY MEMBERS

- Ibraheem Wahdan Ph.D. in Electro-physiology (London, UK, 1975).
- Waleed Sweileh Ph.D. in Biomedical Sciences (Pharmacology)
(University of Boston, USA, 2000).
- Samar Musmar M.B.B.CH. in Medicine and General Surgery (Egypt, 1982),
- Zakaria Qaqa, M.D M.Sc. In Internal Medicine, 1983
Jordanian Board, Internal Medicine, 1983
American Board, Internal Medicine, 1990
American Board, Cardiology, 1993
- Gassan Abu Hijleh, M.D Ph.D. In Anatomy, Glasgow University, UK, 1987
- Husni Maqboul, M.D M.Sc. In Histology, University of Jordan, Amman,
Jordan, 1991
- Omar N. Al-Masri, M.D American Board, Pediatrics (BC) 1999
American Board, Pediatric Nephrology (BE) 2002
University of California at Los Angeles (UCLA)
- Nedal Shawkat Kamal, M.D American Board, Internal Medicine (BC) 1976
American Board, Pulmonary Medicine (BC) 1979
Michigan State University (MSU)
- Talib Dibbas, M.D Internist and Neurologist (MRCP)
Dublin, Ireland, 1985
- Mahdi Kamal, M.D Internist and Gastroentrolgist
M.R.C.P., Dublin, Ireland, 1990
- Basil Hanbali, M.D Internist, Cardiologist
M.R.C.P., London, UK, 1988
- Fahd Abu-Zant, M.D General Surgeon
F.R.C.S., Glasgow, UK, 1983
- Hisham Na'na', M.D F. Ob. & Gyn. M.R.C.O.G, F.R.C.S.

COLLEGE OF VETERINARY MEDICINE

Introduction

The College of Veterinary Medicine was established on the land of Khadouri, Tulkarem, in 1999, as a response to the national need for the improvement of animal health and the increase of productivity by increasing animal numbers, and the reduction of production costs. This college, the first in Palestine, hopes to make significant contribution to the improvement of national income, provide food security and maintain safe public health. At present, the college has three departments: Basic Veterinary Medical Sciences, Nutrition and Public Health, and Clinical Veterinary Medical Sciences. In addition, the college is home to a number of facilities, labs, clinics, centers and units. These facilities are used to provide training for college students and veterinarians in the private and public sectors. The college facilities also provide services and consultancies to institutions and farms concerning animal health problems.

Requirements for Admission

To join the College of Veterinary Medicine, a student must have completed high school (tawjihi), scientific stream, with an average of no less than 80%. And to obtain a B.Sc. degree in veterinary medicine, a student must successfully complete 174 credit hours: University requirements 23, and College 151. These include both compulsory and elective courses.

A. Compulsory courses from College of Science (27 credit hours)

Course #	Course title	Credit hours	Prerequisite
24101	Biology I	3	-
24107	Biology I Lab	1	24101
24102	Biology II	3	24107+24101
24108	Biology II Lab	1	24102
23101	Chemistry I	3	-
23107	Chemistry I Lab	1	23101
23102	Chemistry II	3	23101
23108	Chemistry II Lab	1	23102
23233	Organic Chemistry	3	23102
23237	Organic Chemistry Lab	2	23233
25202	Biostatistics	3	-
27120	Introduction to Computer	3	-
Total		27	-

B. Compulsory courses from College of Veterinary Medicine (119 credit hours)

Course #	Course title	Credit hours	Prerequisite
12221	Animal Physiology I	4(3+1)	24101, 24102
12222	Animal Physiology II	3(2+1)	12221
12223	Biochemistry	4(3+1)	23233, 23237
12225	Animal Husbandry	3	24102
12226	Genetics and Breeding	2(2+0)	12225
12231	Veterinary Anatomy I	3(1+2)	24102, 24108
12232	Histology and Embryology	3(2+1)	12231
12241	Veterinary Anatomy II	3(1+2)	12231
12242	Basic Veterinary Microbiology	3(2+1)	24102, 24108
12258	Poultry Management	2(1+1)	12225
12382	Animal Nutrition	3(2+1)	12223, 12222
12341	Veterinary Immunology	3(2+1)	12242
12342	Veterinary Virology	3(2+1)	12242
12343	Veterinary Parasitology I	3(2+1)	12242
12344	Veterinary Parasitology II	3(2+1)	12343
12345	Veterinary Bacteriology and Mycology	4(3+1)	12242
12352	Veterinary Pathology I	4(3+1)	12232, 12222
12372	Pharmacology and Toxicology	4(3+1)	, 12223 12222
12399	Practical Training I	3(0+3)	Department approval
12451	Veterinary Pathology II	4(2+2)	12352
12454	Veterinary Clinical Pathology	2(1+1)	12345, 12352
12455	Poultry Diseases	3(2+1)	12258, 12345
12461	Dairy Hygiene	3(2+1)	12345
12464	Meat Hygiene	3(2+1)	12352, 12345
12473	Veterinary Internal Medicine I	3(2+1)	12241, 12352
12474	Veterinary Infectious Diseases	3(3+0)	12451, 12473
12482	Veterinary Surgery I	3(2+1)	12241, 12372
12488	Theriogenology I	3(2+1)	12241, 12222
12499	Practical Training II	6(0+6)	Department approval
12554	Forensic Medicine	1	12372, 12451
12562	& Zoonosis Epidemiology	3	12451, 12474
12571	Veterinary Internal Medicine II	3	12473
12581	Veterinary Surgery II	3(2+1)	12482
12583	Theriogenology II	3(2+1)	12484
12591	Clinic I	4(0+4)	12451, 12484, 12482
12592	Clinic II	4(0+4)	12591
12511	Ethics and Laws in Veterinary Medicine	1	12345
12515	Animal and Environment	1	24101, 24102

C. Elective courses from the College of Veterinary Medicine (17 credit hours)

Course #	Course title	Credit hours
12471	Clinical Pharmacology	(1+1)2
12522	Clinical Chemistry	(1+1)2
12552	Fish Sciences Ichthyology	(1+1)2
12570	Drug Evaluation	(1+1)2
12574	Equine Medicine Surgery	(1+1)2
12584	Veterinary Anaesthesiology	(1+1)2
12585	Diagnostic Imaging	(1+1)2
12521	Molecular Biology	1
12513	Veterinary Economics	1
12553	Bee Diseases	1
12576	Ophthalmology	(3+1)2
12517	Special Topics	1

Course descriptions:**VET12221 Animal Physiology I**

This is a general physiology course in which the major organ systems are described: the nervous system, the cardiovascular system, blood components and the digestive system.

VET12222 Animal Physiology II

This is a continuation of Animal Physiology I. Topics highlighted are the respiratory system, renal system, endocrinology, animal reproduction, acid-base balance and thermal regulation.

VET12223 Biochemistry

This is an introductory biochemistry course which covers the general structure and function of proteins, carbohydrates, lipids and nucleic acids. In addition, the different metabolic pathways and information pathways are discussed.

VET12225 Animal Husbandry

In this course, different methods of handling and controlling domestic animals, such as cows, sheep, goats, horses and camels, in addition to small animals (dogs and cats), are discussed. The course also covers the identification of different anatomical body organs. Besides, the students will be introduced to methods of writing short essays and reports related to issues and problems in animal husbandry. The students will be evaluated partially on their writing performance.

VET12226 Genetics and Breeding

This course begins with an introduction to improving animal breeds through the study of cellular structures, such as chromosomes and genes as well as methods of mating selection to obtain genetically improved breeds.

VET12231 Veterinary Anatomy I

This course covers embalming of animals including bone preparation for study, osteology, arthrology, mycology and cardiovascular systems of different domestic animals. Additionally, the innervation of thoracic, pelvic limbs of the horse, the peritoneum with its reflection and all parts of the digestive system are discussed.

VET12232 Veterinary Histology & Embryology

This course introduces glass slide preparation, methods of study by light microscope, different intracellular structures such as epithelium, glands, C.T., muscular, nervous, and all animal systems of different domestic animals. Furthermore, electron microscopy photographs, desmosomes and cell to cell pictures and embryonic development starting from fertilization to implantation inside the uterus are presented.

VET12231 Veterinary Anatomy II

This course covers the pleura and its reflection, respiratory, urinary, male and female genitals, in addition to the anatomy of the nervous system, lymphatic, eye and hoof. A brief description of poultry anatomy is also given.

VET12242 Basic Veterinary Microbiology

This course deals with the structure, physiology, growth, nutrition classification of microbes, their mode of infection, virulence, and hosts with emphasis on veterinary health aspects.

VET12258 Poultry Management

This course is designed to provide basic and applied knowledge on sound management of various poultry enterprises: breeder, layer, broiler flocks, hatcheries and feed mills. It also covers poultry house design, ventilation systems, drinking, feeding systems, environmental management, sanitation, disinfection and vaccination. The role of biosecurity in the poultry industry is defined.

VET12382 Animal Nutrition

This course is a study of basic nutritional requirements for all species of domestic animals and the metabolic differences. Further, it covers ration components and the diagnosis of diseases resulting from under-or-overfeeding of different constituents with emphasis on sick animals' rations.

VET12341 Veterinary Immunology

This course begins with an overview of the fundamental concepts of immunology with emphasis on the immune system of domestic animals and comparative immunology. Then, it moves to the interaction between the host and microbial pathogens, mechanisms that underlie hypersensitivity reactions, autoimmune disease and immune deficiency. In addition, it provides students with knowledge to perform different serological techniques used in disease diagnosis.

VET12342 Veterinary Virology

This course covers general virology, systemic virology and practical virology. The general virology unit includes virus evaluation, host range, and virus classification. The systemic virology unit includes important viral diseases of cattle, sheep, goats, equine, poultry and canine. The practical virology unit includes the proper collection, presentation and submission of specimens for laboratory diagnosis of viral diseases.

VET12343 Veterinary Parasitology I

This course highlights general aspects of parasitic infection in different animals, in addition to classification, description of external features of parasites, internal parasites, molecular infection and epidemiology of parasitic infections.

VET12344 Veterinary Parasitology II

This course covers external parasites and ticks in particular. In addition, the course teaches classification of parasites, epidemiology, and methods of tick control.

VET12354 Veterinary Microbiology

The course deals with the study of different groups of aerobic and anaerobic bacteria, spirochetes, mycoplasmas, chlamydia, fungi, yeast and mold, with emphasis on their methods of classification, virulence and distribution in different animal species.

VET12372 Veterinary Pharmacology and Toxicology

This course deals with the principles of drug action, including pharmacokinetics, mode of action, drug interactions, major side effects and important drug toxicities. Emphasis is placed on the general principles of drugs that alter tissue and system functions and antimicrobial and antiparasitic drugs, the effects of common toxic chemicals, plants and poisons on animals with special emphasis on clinical manifestation, diagnosis prevention and treatments.

Ve12352 Veterinary Pathology I

Main anatomical and functional changes which found in animal diseases are discussed. Besides, cellular identification, inflammation and tamers are covered.

VET12451 Veterinary Pathology II

This course will expose students to the pathological changes of different body systems, with emphasis on congenital, bacterial infections, metabolic, nutritional and immunological disturbances.

VET12454 Veterinary Clinical Pathology

This course covers methods of hematological and body fluid examination, liver, pancreas and kidney function tests in order to make laboratory interpretations.

VET12455 Poultry Diseases

This course is designed to give basic and practical knowledge on diagnosis, treatment, and preventative measures against bacterial, parasitic, fungal, and nutritional diseases that occur in chickens, turkeys and caged birds.

VET12461 Milk Hygiene

Students learn about physical and chemical properties of adulteration, quality evaluation of milk, sources of contamination, heat treatment, zoonotic diseases transmitted through milk and milk products. The course ends with an examination of milk for drug residues.

VET12464 Meat Hygiene

Students, in this course, are introduced to meat inspection for bacterial, viral, and parasitic infections of slaughtered animals. Detection of chemical residues in meat and poultry, and judgement of fitness of the meat for human consumption are covered.

VET12473 Veterinary Internal Medicine I

The purpose of this course is to provide the students with a basic understanding of the general systemic status and the clinical approaches of diagnosis and treatment of common medical diseases of domestic animals.

VET12474 Veterinary Infectious Diseases

This course covers diseases caused by viruses, bacteria, parasites, and fungi affecting different domestic animals, in addition to the causative agents, clinical symptoms, diagnosis, treatment and control.

VET12482 Veterinary Surgery I

This course offers the basic knowledge of veterinary surgery and anaesthesiology. It discusses the general principles of pre-surgical, surgical and postsurgical considerations.

VET12399 Practical Training

The students will be trained in veterinary laboratories, off the university campus, to learn clinical laboratory methods.

VET12488 Theriogenology I

This course covers male and female genital systems, puberty follicular development, genesis, ovulation, fertilization and estrous in domestic animals, in addition to semen collection, evaluation, preparation, freezing and artificial insemination.

VET12499 Practical Training

This course deals with diseased cases presented to the university Veterinary Health Center, as well as those presented to specialized clinics and farms outside the university. In addition, students will be trained for meat inspection in slaughterhouses, and in morbid anatomy.

VET12554 Forensic Medicine

This course deals professionally with the study of the cause of death, and legally with crimes against animals.

VET12562 Epidemiology

This course includes the epidemiology and prevention of infectious and chronic diseases and their effects on human health and environment. Also, it includes the basis of biostatistics related to veterinary medicine and animal productivity.

VET12571 Veterinary Internal Medicine II

This is an extension of Vm12473.

VET12581 Veterinary Surgery II

The course includes general knowledge of common surgical problems in domestic animals, and lameness diagnosis in horses using the X-ray method.

VET12583 Theriogenology II

This course covers the physiology, pathology of pregnancy, and methods of pregnancy diagnosis in farm animals. Additionally, congenital anomalies, parturition, dystocia, sterility and their treatment are included.

VET12591 Veterinary Clinic I

This course covers skills concerning diagnosis and treatment of diseases in different animal species referred to the Veterinary Health Center or through field services.

VET12592 Veterinary Clinic II

Continuation of Veterinary Clinic I.

VET12511 Ethics and Laws in Veterinary Medicine

The course covers the development of the veterinary profession among ancient civilizations. Description of laws related to the veterinary profession in all mentioned civilizations, with emphasis on activities related to animals and their production, at national, regional and international levels, are covered.

VET12515 Animals and Environment

This course focuses on the inter-relationship between animals and the environment in addition to the effect of animals on the environment and vice-versa. Animal diseases resulting from environmental changes are also covered.

FACULTY MEMBERS

Associate Professors

Salameh Barhoom

Ph.D. in Veterinary Medicine,
Hungarian Academy of Science, Hungary, 1983.

Assistant Professors

Hatem Atalla

Ph.D. In Veterinary Medicine.
Istanbul. Turkey, 2002.