

B.TECH. PROGRAMME

ELECTRICAL AND ELECTRONICS ENGINEERING

CURRICULUM

**for 2010 admissions
onwards**

GENERAL INFORMATION

In this section, category-wise distribution of credits for B.Tech (Electrical and Electronics Engineering) program for all semesters are given, followed by curriculum.

Code Numbering

Each course is assigned a code number consisting of two letters followed by three digits. The two-letter code indicates the department offering the course. The digit code indicates the level of the course (100,200,300,400 etc..). The odd number indicates courses offered in odd semesters and even number indicates courses offered in even semesters. When a subject is offered in both even and odd semesters, the digit code ends with a zero. Generally Elective courses begin with * 51 and lab courses begin with *90. Courses in humanity subjects (except language) are offered by any department where expertises are available.

ABBREVIATIONS

Curriculum

L	-	Lecture	H	-	Humanities
T	-	Tutorial	S	-	Science
P	-	Practical	M	-	Mathematics
Cr	-	Credit	G	-	General Engg.
Cat	-	Category	C	-	Core Engg.
ES	-	Exam Slot	Pr	-	Project

Departments

AES	-	Aerospace Engineering
CHE	-	Chemical Engineering
CHY	-	Chemistry
CSE	-	Computer Science and Engineering
CVL	-	Civil Engineering
ECE	-	Electronics and Communication Engineering
EEE	-	Electrical and Electronics Engineering
EIE	-	Electronics and Instrumentation Engineering
HUM	-	Humanities and Languages
MAT	-	Mathematics
MEC	-	Mechanical Engineering
PHY	-	Physics

B Tech Programme
ELECTRICAL AND ELECTRONICS ENGINEERING
REVISED CURRICULUM
(2010 admissions onwards)

SEMESTER I:

Cat.	Code	Course Title	L-T-P	Cr	ES
H	ENG111	Communicative English	2 0 2	3	G
S	PHY100/ CHY100	Physics/ Chemistry	3 0 0	3	B
M	MAT111	Calculus, Matrix Algebra and Ordinary Differential Equations	3 1 0	4	A
G	EEE100	Electrical Engineering	3 0 0	3	C
G	MEC100/ CSE100	Engineering Mechanics/ Computer Programming	3 1 0 3 0 0	4 3	D
G	MEC181	Engineering Drawing	1 0 3	2	-
S	PHY181/ CHY181	Physics Lab./ Chemistry Lab.	0 0 3	1	-
G	MEC180/ EEE180	Workshop A/ Workshop B	1 0 2	2	-
G	CSE180	Computer Programming Lab.	0 0 3	1	-
H	CUL101	Cultural Education I	2 0 0	2	H

H = 5 S = 4 M = 4 G = 11**Total = 24****SEMESTER II:**

Cat.	Code	Course Title	L-T-P	Cr	ES
H	ENG112	Technical Communication	2 0 2	3	G
S	CHY100/ PHY100	Chemistry/ Physics	3 0 0	3	B
M	MAT112	Vector Calculus, Fourier Series and Partial Differential Equations	3 1 0	4	A
G	ECE100	Electronics Engineering	3 0 0	3	C
G	CSE100/ MEC100	Computer Programming/ Engineering Mechanics	3 0 0 3 1 0	3 4	D
G	MEC182	Computer Aided Drawing	1 0 3	2	-
S	CHY181/ PHY181	Chemistry Lab./ Physics Lab.	0 0 3	1	-
G	EEE180/ MEC180	Workshop B/ Workshop A	1 0 2	2	-
G	CSE180	Computer Programming Lab.	0 0 3	1	-
H	CUL102	Cultural Education II	2 0 0	2	H

H = 5 S = 4 M = 4 G = 11**Total = 24**

III Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
M	MAT211	Integral Transforms and Complex Analysis	3 1 0	4	A
C	EEE212	Electric Circuits	3 1 0	4	E
C	ECE210	Digital Systems	3 1 0	4	C
C	MEC209	Mechanical Engineering	4 0 0	4	D
S		Science Elective I	3 0 0	3	B
H		Humanities Elective I	1 0 2	2	H
C	EEE291	Simulation Lab. and Electrical Workshop	1 0 3	2	-
C	EEE292	Electric Circuits Lab.	0 0 3	1	-
M = 4 H = 2 S = 3 C = 15			Total = 24		

IV Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
M	MAT212	Mathematical Statistics and Numerical Methods	3 1 0	4	A
C	EEE213	Electrical Measurements and Instrumentation	3 1 0	4	C
C	EEE221	Electrical Machines I	3 1 0	4	D
C	EEE222	Electromagnetic Theory	3 1 0	4	E
S		Science Elective II	3 0 0	3	B
H		Humanities Elective II	1 0 2	2	H
C	EEE293	Electrical Machines Lab. I	0 0 3	1	-
C	EEE294	Measurements and Digital Circuits Lab.	0 0 3	1	-
H	SSK111	SOFT SKILLS I	0 0 3	1	-
M = 4 H = 3 S = 3 C = 14			Total = 24		

V Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C	EEE311	Electronic Circuits	3 1 0	4	B
C	EEE321	Electrical Machines II	3 1 0	4	F
C	EEE331	Electrical Energy System I	3 1 0	4	E
C	ECE220	Signals and Systems	3 1 0	4	D
C	ECE310	Introduction to Microcontrollers and Applications	3 1 0	4	C
C	EEE391	Electrical Machines Lab. II	0 0 3	1	-
C	EEE392	Measurements and Analog Circuit Lab.	0 0 3	1	-
H	SSK112	SOFT SKILLS II	0 0 3	1	-
H = 1 C = 22			Total = 23		

VI Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C	EEE332	Electrical Energy Systems II	3 1 0	4	B
C	EEE341	Power Electronics	3 1 0	4	A
C	EEE342	Control Engineering	3 1 0	4	E
C	ECE221	Digital Signal Processing	3 1 0	4	D
C		Elective I	3 0 0	3	F
C	EEE393	Electronic Circuits Lab.	0 0 3	1	-
C	EEE394	Microprocessor and Microcontroller Lab.	0 0 3	1	-
Pr	EEE397	Seminar	0 0 2	1	-
H	SSK113	SOFT SKILLS III	0 0 3	1	-
H = 1 C = 21 Pr = 1			Total = 23		

VII Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C	EEE431	Power System Protection and Switchgear	3 0 0	3	B
C	EEE441	Electrical Drives and Control	3 1 0	4	A
H	ENV200	Environmental Studies	3 1 0	4	D
C		Elective II	3 0 0	3	E
C		Elective III	3 0 0	3	F
H	MNG400	Principles of Management	3 0 0	3	C
C	EEE491	Power System Simulation Lab.	0 0 3	1	-
C	EEE492	Power Electronics Lab.	0 0 3	1	-

H = 7 C = 15

Total = 22

VIII Semester

Cat.	Code	Course Title	L-T-P	Cr	ES
C		Elective IV	3 0 0	3	F
H		Management Elective	3 0 0	3	C
Pr	EEE499	Project		10	-

H = 3 C = 3 Pr = 10

Total = 16

Total credits for the programme =180

ELECTIVES

POWER SYSTEM/POWER ELECTRONICS/GENERAL

EEE351	Design of Electrical Apparatus
EEE352	Design of Electrical Systems
EEE353	Illumination Engineering
EEE354	Electromagnetic Compatibility
EEE355	Industrial Electronics
EEE450	Optimisation Techniques
EEE451	Power System Stability
EEE452	Renewable Energy and Energy Conservation
EEE453	Flexible AC Transmission Systems
EEE454	Power System Control
EEE455	High Voltage Engineering
EEE456	Special Electric Machines
EEE457	Utilization of Electric Energy
EEE458	Power Convertors
EEE459	Network Synthesis
CSE380	IT Essentials
ECE480	Financial Engineering

INSTRUMENTATION AND CONTROL

EEE361	Power Plant Instrumentation
EEE461	Advance Control Theory
EEE462	Digital Control Systems
EEE463	Process Control and Instrumentation
EEE464	Optoelectronics and Laser Instrumentation
EIE413	Biomedical Instrumentation

COMPUTER & COMMUNICATION SYSTEMS

EEE371	Advanced Microcontrollers
EEE372	Communication Engineering
EEE373	Introduction to Computer Networks
EEE471	Embedded Systems Design
EEE472	Fundamentals of Soft Computing
EEE473	Digital Signal Processors
EEE474	Digital Image Processing

MANAGEMENT ELECTIVES

EEE456	Special Electric Machines
EEE480	Power System Management
EEE481	Energy Management and IT Applications
EEE482	Management of Power Distribution

SCIENCE ELECTIVES (3 0 0 3)

CHY250	Catalytic Chemistry
CHY251	Chemistry of Engineering Materials
CHY252	Chemistry of Advanced Materials
CHY253	Advanced Polymer Chemistry
CHY254	Polymers for Electronics
CHY255	Chemistry of Toxicology
CHY256	Chemistry of Nanomaterials
CHY257	Biomaterials Science
CHY258	Environmental Chemistry
CHY259	Instrumental Methods of Analysis
CHY260	Organic Synthesis and Stereochemistry
CHY261	Unit Processes in Organic Synthesis
CHY262	Medicinal Organic Chemistry
CHY263	Organic Reaction Mechanisms
CHY264	Green Chemistry and Technology
CHY270	Corrosion Science
CHY271	Electrochemical Energy Systems and Processes
CHY272	Computational Chemistry and Molecular Modelling
CHY273	Fuel Cells – Principles and Applications
CHY274	Solid State Chemistry
PHY250	Electrical Engineering Materials
PHY251	Optoelectronic Devices
PHY252	Physics of Semiconductor Devices
PHY253	Electromagnetic Fields and Waves
PHY254	Microelectronic Fabrication
PHY255	Electronic Materials Science
PHY260	Physics of Lasers and Applications
PHY261	Lasers in Material Processing
PHY262	Non-linear Dynamics
PHY263	Concepts of Nanophysics and Nanotechnology
PHY264	Thin Film Physics
PHY270	Medical Physics
PHY271	Advanced Classical Dynamics
PHY272	Quantum Physics and its Applications
PHY273	Computational Physics
PHY274	Astrophysics

HUMANITIES ELECTIVES (1 0 2 2)

CUL151	Achieving Excellence in Life - An Indian Perspective
CUL152	Exploring Science and Technology in Ancient India
CUL153	Excellence in Daily Life
CUL154	Yoga Psychology
ENG250	Professional Communication
ENG251	Business Communication
ENG252	Indian Thought in English
ENG253	Insights into Life through English Literature
FRE201	Proficiency in French Language (Lower)
FRE202	Proficiency in French Language (Higher)
GER201	Proficiency in German Language (Lower)
GER202	Proficiency in German Language (Higher)
GER211	German for Beginners I
GER212	German for Beginners II
HUM250	Indian Classics for the Twenty-first Century
HUM251	Introduction to India Studies
HUM252	Glimpses of Eternal India
HUM253	Glimpses into the Indian Mind - The Growth of Modern India
HUM254	Glimpses of Indian Economy and Polity
HUM255	Science and Society – An Indian Perspective
JAP201	Proficiency in Japanese Language (Lower)
JAP202	Proficiency in Japanese Language (Higher)