

**Amrita Vishwa Vidyapeetham**  
**Curriculum - B.Sc. (Physics, Chemistry, Mathematics)**

Course Code	Semester I	L T P	Credit	Course Code	Semester II	L T P	Credit
21ENG101	Communicative English	2 0 2	3	21ENG111	Professional Communication	1 0 2	2
	Language I	2 0 0	2		Language II	2 0 0	2
23PHY103	<b>Mechanics</b>	3 0 2	4	23PHY113	<b>Heat and Thermodynamics</b>	3 0 2	4
23MAT101	<b>Calculus</b>	3 1 0	4	23MAT120	<b>Introduction to Linear Algebra</b>	3 1 0	4
21CHY106	Chemistry Paper I <b>Atomic structure, Chemical Bonding and Analytical Chemistry</b>	3 0 2	4	21CHY116	Chemistry Paper II <b>Nuclear Chemistry, States of Matter and Chemistry of s and p Block elements</b>	3 0 2	4
21ENV200	Environmental Science and Sustainability	3 0 0	3	22ADM111	Glimpses of Glorious India	2 0 1	2
22ADM101	Foundations of Indian Heritage	2 0 1	2	21LAW200	Indian Constitution	2 0 0	2
				22AVP103	Mastery Over Mind	1 0 2	2
	<b>Subtotal</b>		<b>22</b>		<b>Subtotal</b>		<b>22</b>
Course Code	Semester III	L T P	Credit	Course Code	Semester IV	L T P	Credit
	Amrita Value Programme I	1 0 0	1		Amrita Value Programme II	1 0 0	1
23PHY206	<b>Electricity and Magnetism</b>	3 0 2	4	23PHY214	<b>Optics</b>	3 0 2	4
23MAT219	<b>Differential Equations</b>	3 1 0	4	23MAT211	<b>Modern Algebra</b>	3 1 0	4
21CHY206	Chemistry Paper III <b>Hydrocarbons, Alkyl and Aryl Halides</b>	3 0 2	4	21CHY216	Chemistry Paper IV <b>Photochemistry and Pericyclic reactions</b>	3 0 0	3
21SSK201	Life Skills I	1 0 2	2	21CHY217	Chemistry Paper V <b>Thermodynamics, Chemical Equilibrium and Electrochemistry</b>	3 0 2	4
	Elective A	3 0 0	3		Open Elective	3 0 0	3
	Elective B	3 0 0	3	21SSK211	Life Skills II	1 0 2	2
21CSA205	PC Software	1 0 1	2		Elective C	3 0 0	3
	<b>Subtotal</b>		<b>23</b>		<b>Subtotal</b>		<b>24</b>
Course Code	Semester V	L T P	Credit	Course Code	Semester VI	L T P	Credit
23PHY304	<b>Basic Electronics</b>	3 1 0	4	23PHY314	<b>Atomic and Molecular Physics</b>	3 1 0	4
23PHY383	Basic Electronics - <b>Practical</b>	0 0 2	1	23PHY384	Atomic and Molecular Physics - <b>Practical</b>	0 0 2	1
23MAT301	<b>Real Analysis</b>	3 1 0	4	23MAT311	<b>Complex Analysis</b>	2 1 0	3

23MAT308	<b>Discrete Mathematics and its applications</b>	2 1 0	3	23MAT314	<b>Introduction to Probability and Statistics</b>	3 1 0	4
21CHY306	Chemistry Paper VI <b>Transition elements, Coordination compounds, Chemical kinetics and Spectroscopy</b>	3 0 0	3	21CHY316	Chemistry Paper VIII <b>Functional Groups, Heterocyclic compounds and Natural products</b>	3 1 0	4
21CHY386	Chemistry Paper VII -Practical Paper Practicals- VII	0 0 2	1	21CHY387	Chemistry Paper IX -Practical Paper <b>Practicals</b>	0 0 2	1
21SSK301	Life Skills III	1 0 2	2	21SCI399	Project		6
	Elective D	3 0 0	3				
23LIV390*	Open Elective / Live-in Lab*	3 0 0	3				
	<b>Subtotal</b>		<b>24</b>		<b>Subtotal</b>		<b>23</b>
<b>Total Credits till VI Semester – 138</b>							

#### Electives : Physics

23PHY351	Medical Physics
23PHY352	Renewable Energy and Energy Harvesting
23PHY353	Introduction to Nanophysics and Applications
23PHY354	Physics of the Atmosphere
23PHY355	Biophysics
23PHY356	Space Physics
23PHY357	Semiconductor Physics
23PHY358	Modern Physics

#### Electives: Mathematics

21MAT431	Operations Research
23MAT331	Integral Transforms and Fourier Series
23MAT332	Applied Statistics
23MAT333	Number Theory
23MAT334	Special Functions
23MAT335	Multivariate Statistics

#### Electives: Chemistry

21CHY531	Environmental Chemistry
21CHY532	Chemistry of Toxicology
21CHY533	Forensic Science
21CHY534	Nanochemistry and Nanotechnology
21CHY535	Pharmaceutical Chemistry
21CHY536	Supramolecular Chemistry
21CHY537	Green Chemistry
21CHY538	Modeling and Simulation of Chemical Processes

#### OPEN ELECTIVES

Course Code	Course Title	L – T – P	Cr.	ES
21OEL231	A Journey towards Free India	3 0 0	3	J

21OEL232	Political Leadership	3 0 0	3	J
21OEL233	Social issues in Contemporary India	3 0 0	3	J
21OEL234	The Story of Indian Business	3 0 0	3	J
21OEL235	Industrial Psychology	3 0 0	3	J
21OEL236	Advertising	3 0 0	3	J
21OEL237	Basic Statistics	3 0 0	3	J
21OEL238	Citizen Journalism	3 0 0	3	J
21OEL239	Creative Writing for Beginners	3 0 0	3	J
21OEL240	Desktop Support and Services	3 0 0	3	J
21OEL241	Development Journalism	3 0 0	3	J
21OEL242	Digital Photography	3 0 0	3	J
21OEL243	Emotional Intelligence	3 0 0	3	J
21OEL244	Essence of Spiritual Literature	3 0 0	3	J
21OEL245	Film Theory	3 0 0	3	J
21OEL246	Fundamentals of Network Administration	3 0 0	3	J
21OEL247	Gender Studies	3 0 0	3	J
21OEL248	Glimpses of Indian Economy and Polity	3 0 0	3	J
21OEL249	Graphics and Web-designing Tools	3 0 0	3	J
21OEL250	Green Marketing	3 0 0	3	J
21OEL251	Healthcare and Technology	3 0 0	3	J
21OEL252	History of English Literature	3 0 0	3	J
21OEL253	Indian Writing in English	3 0 0	3	J
21OEL254	Industrial Relations and Labour Welfare	3 0 0	3	J
21OEL255	Introduction to Ancient Indian Yogic and Vedic Wisdom	3 0 0	3	J
21OEL256	Introduction to Computer Hardware	3 0 0	3	J
21OEL257	Introduction to Event Management	3 0 0	3	J
21OEL258	Introduction to Media	3 0 0	3	J
21OEL259	Introduction to Right to Information Act	3 0 0	3	J
21OEL260	Introduction to Translation	3 0 0	3	J
21OEL261	Linguistic Abilities	3 0 0	3	J
21OEL262	Literary Criticism and Theory	3 0 0	3	J
21OEL263	Macro Economics	3 0 0	3	J
21OEL264	Managing Failure	3 0 0	3	J
21OEL265	Media Management	3 0 0	3	J
21OEL266	Micro Economics	3 0 0	3	J

21OEL267	Micro Finance, Small Group Management and Cooperatives	3 0 0	3	J
21OEL268	Negotiation and Counselling	3 0 0	3	J
21OEL269	New Literatures	3 0 0	3	J
21OEL270	Non-Profit Organization	3 0 0	3	J
21OEL271	Personal Effectiveness	3 0 0	3	J
21OEL272	Perspectives in Astrophysics and Cosmology	3 0 0	3	J
21OEL273	Principles of Marketing	3 0 0	3	J
21OEL274	Principles of Public Relations	3 0 0	3	J
21OEL275	Science, Society and Culture	3 0 0	3	J
21OEL276	Statistical Analysis	3 0 0	3	J
21OEL277	Teamwork and Collaboration	3 0 0	3	J
21OEL278	The Message of Bhagwad Gita	3 0 0	3	J
21OEL279	Understanding Travel and Tourism	3 0 0	3	J
21OEL280	Videography	3 0 0	3	J
21OEL281	Vistas of English Literature	3 0 0	3	J
21OEL282	Web-Designing Techniques	3 0 0	3	J
21OEL283	Organic Farming	3 0 0	3	J
21OEL284	Basic Legal Awareness on Protection of Women and Rights	3 0 0	3	J
21OEL285	Ritual Performances of Kerala	3 0 0	3	J
21OEL286	Documenting Social Issues	3 0 0	3	J
21OEL287	Fabrication of Advanced Solar Cell	3 0 0	3	J
21OEL288	Basic Concepts of X-ray Diffraction	3 0 0	3	J
21OEL289	Introduction to FORTRAN and GNUPLOT	3 0 0	3	J
21OEL290	Introduction to Porous Materials	3 0 0	3	J
21OEL291	Forensic Science	3 0 0	3	J
21OEL292	Introduction to solar Physics	3 0 0	3	J
21OEL293	Recycling Recovery and Treatment Methods for Wastes	3 0 0	3	J
21OEL294	Acting and Dramatic Presentation	2 0 2	3	J
21OEL295	Computerized Accounting	2 0 2	3	J
21OEL296	Kerala Mural Art and Painting	2 0 2	3	J
21OEL297	Painting	2 0 2	3	J
21OEL298	Reporting Rural Issues	3 0 0	3	J

**Amrita Value Programmes I & II for UG programmes**

Course Code	Title	L-T-P	Credits
-------------	-------	-------	---------

22ADM201	Strategic Lessons from Mahabharatha	1-0-0	1
22ADM211	Leadership from Ramayana	1-0-0	1
22AVP210	Kerala Mural Art and Painting	1-0-0	1
22AVP218	Yoga Therapy and Lessons	1-0-0	1
22AVP212	Introduction to Traditional Indian Systems of Medicine	1-0-0	1
22AVP201	Amma's Life and Message to the modern world	1-0-0	1
22AVP204	Lessons from the Upanishads	1-0-0	1
22AVP205	Message of the Bhagavad Gita	1-0-0	1
22AVP206	Life and Message of Swami Vivekananda	1-0-0	1
22AVP207	Life and Teachings of Spiritual Masters of India	1-0-0	1
22AVP208	Insights into Indian Arts and Literature	1-0-0	1
22AVP213	Traditional Fine Arts of India	1-0-0	1
22AVP214	Principles of Worship in India	1-0-0	1
22AVP215	Temple Mural Arts in Kerala	1-0-0	1
22AVP218	Insights into Indian Classical Music	1-0-0	1
22AVP219	Insights into Traditional Indian Painting	1-0-0	1
22AVP220	Insights into Indian Classical Dance	1-0-0	1
22AVP221	Indian Martial Arts and Self Defense	1-0-0	1
22AVP209	Yoga and Meditation	1-0-0	1