

Curriculum - B.Sc. Physics, Mathematics, Computer Science

Semester I				Semester II			
Course Code	Course Title	L T P	Credit	Course Code	Course Title	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	Mechanics	3 0 2	4	23PHY113	Heat and Thermodynamics	3 0 2	4
23MAT101	Calculus	3 1 0	4	23MAT111	Linear Algebra	3 0 2	4
23MAT102	Discrete Mathematics	2 1 2	3	23CSA113	Data Structures and Algorithms	3 0 2	4
23CSA101	Problem Solving and Programming	3 0 2	4	23CSA114	Database Management System	3 0 2	4
21ENV200	Environmental Science and Sustainability	3 0 0	3	22ADM111	Glimpses of Glorious India	2 0 0	2
22ADM101	Foundations of Indian Heritage	2 0 0	2	21LAW200	Indian Constitution	2 0 0	2
				22AVP103	Mastery Over Mind	1 0 2	2
	Subtotal		25		Subtotal		26
Semester III				Semester IV			
Course Code	Course Title	L T P	Credit	Course Code	Course Title	L T P	Credit
	Amrita Value Programme I	1 0 0	1		Amrita Value Programme II	1 0 0	1
23PHY206	Electricity and Magnetism	3 0 2	4	23PHY214	Optics	3 0 2	4
23MAT202	Probability and Statistics	3 0 2	4	23MAT211	Modern Algebra	3 1 0	4
23CSA201	Exploratory Data Analysis using Python	3 0 2	4	23CSA211	Introduction to Machine Learning	3 0 2	4
23MAT203	Operation Research and Optimization	3 0 0	3	23CSA212	Big data analytics and Visualization	3 0 2	4
21SSK201	Life Skills I	1 0 2	2		Open Elective	3 0 0	3
	Elective A	3 0 0	3	21SSK211	Life Skills II	1 0 2	2
	Elective B	3 0 0	3		Elective C	3 0 0	3
	Subtotal		24		Subtotal		25

Semester V				Semester VI			
Course Code	Course Title	L T P	Credit	Course Code	Course Title	L T P	Credit
23PHY304	Basic Electronics	3 1 0	4	23PHY314	Atomic and Molecular Physics	3 1 0	4
23PHY383	Basic Electronics-Practical	0 0 2	1	23PHY384	Atomic and Molecular Physics - Practical	0 0 2	1
23MAT301	Real Analysis	3 1 0	4	23MAT311	Complex Analysis	2 1 0	3
23MAT302	Graph Theory	3 0 0	3	23MAT312	Numerical Methods	3 0 0	3
	Computer Science Lab 01	0 0 2	1	23CSA311	Pattern recognition	3 0 0	3
23CSA301	Introduction to AI	3 0 0	3		Computer Science Lab 02	0 0 2	1
21SSK301	Life Skills III	1 0 2	2	23CSA312	Data mining	3 0 2	4
	Elective	3 0 0	3	23SCI399	Project		6
23LIV390*	Open Elective / Live-in lab*	3 0 0	3				
	Subtotal		24		Subtotal		25
Total Credits till VI Semester – 149							
Electives : Physics				Electives: Computer Science			
23PHY351	Medical Physics	3 0 0	3	23CSA331	Software Engineering	3 0 0	3
23PHY352	Renewable Energy and Energy Harvesting	3 0 0	3	23CSA332	Theory of Computation	3 0 0	3
23PHY353	Introduction to Nanophysics and Applications	3 0 0	3	23CSA333	Soft Computing	3 0 0	3
23PHY354	Physics of the Atmosphere	3 0 0	3	23CSA334	Compiler Design	3 0 0	3
23PHY355	Biophysics	3 0 0	3	23CSA335	Distributed Computing	3 0 0	3
23PHY356	Space Physics	3 0 0	3	23CSA336	Inferential Statistics	3 0 0	3
23PHY357	Semiconductor Physics	3 0 0	3	23CSA337	Image Processing	3 0 0	3
23PHY358	Modern Physics	3 0 0	3	23CSA338	IoT	3 0 0	3
Electives: Mathematics				CS Lab			
23MAT331	Integral Transforms and Fourier Series	3 0 0	3	23CSA381	Mat lab Programming	0 0 2	1
23MAT332	Applied Statistics	3 0 0	3	23CSA382	Data Visualization	0 0 2	1
23MAT333	Number Theory	3 0 0	3	23CSA383	Windows Programming using Dot Net	0 0 2	1
23MAT334	Special Functions	3 0 0	3	23CSA384	Software Testing	0 0 2	1
23MAT335	Multivariate Statistics	3 0 0	3	23CSA385	Object Oriented Programming	0 0 2	1
23MAT336	Differential Equations	3 0 0	3	23CSA386	Machine Learning Lab	0 0 2	1