

Courses Offered by the Department of Physics
Four-Year Undergraduate Programme (FYUGP) for Single and Dual Majors

SEMESTER	COURSE CODE	COURSE TITLE	CREDITS
I	PHYMAJ101	Mechanics and Properties of Matter	4
	PHYSEC101	Practical Electricity	3
	PHYMDC101	Astronomy and Cosmology for the Curious <i>(for students outside the department)</i>	3
	PHYVAC101	Mathematical Review for Physics	2
II	PHYMAJ102	Calculus and Intro to Linear Analysis	4
	PHYMAJ103	Electricity and Magnetism	4
	PHYSEC101	Practical Electricity <i>(for Shift 2 students)</i>	3
	PHYMDC102	Science Fiction and Physics <i>(for students outside the department)</i>	3
III	PHYMAJ201	Waves and Optics	4
	PHYSEC201	Introduction to Computers and Programming	3
	PHYMDC201	Physics of Sports <i>(for students outside the department)</i>	3
	PHYVAC101	Mathematical Review for Physics <i>(for Shift 2 students)</i>	2
IV	PHYMAJ202	Differential Equations and Analysis	4
	PHYMAJ203	Relativity and Modern Physics	4
	PHYSEC201	Introduction to Computers and Programming <i>(for Shift 2 students)</i>	3
V	Both Single Major and Dual Major		
	PHYMAJ301	Electronics	4
	PHYMAJ302	Thermal Physics	4
	PHYMAJ303	Advanced Mathematical Physics – I	4
	SCSINT301	<i>Summer Internship/Fellowship</i>	2
	Single Major only		
	PHYMAJ304	Statistical Methods for Experimental Physics	4
	PHYMAJ305	Background for Quantum Computation	4

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SEMESTER	COURSE CODE	COURSE TITLE	CREDITS
VI	Both Single Major and Dual Major		
	PHYMAJ306	Quantum Mechanics – I	4
	PHYMAJ307	Solid State Physics	4
	PHYMAJ308	Nuclear and Particle Physics	4
	Single Major only		
	PHYMAJ309	Introduction to Machine Learning for Physics	4
	PHYMAJ310	Quantum Computation and Algorithms	4
VII	Both Single Major and Dual Major		
	PHYMAJ401	Advanced Mathematical Physics – II	4
	PHYMAJ402	Analytical Mechanics	4
	PHYMAJ403	Statistical Mechanics	4
	PHYMAJ404	Quantum Computation Course III (TBD)	4
		OR	OR
	PHYUGR401	Research Methodology	4
Dual Major only			
PHYMAJ405	Atomic and Molecular Physics	4	
VIII	Both Single Major and Dual Major		
	PHYMAJ406	Quantum Mechanics – II	4
	PHYMAJ407	Electrodynamics	4
	PHYMAJ408	Advanced Solid State Physics	4
	PHYMAJ409	Quantum Computation Course IV (TBD)	4
		OR	OR
	PHYUGR402	Research	8
Dual Major only			
PHYMAJ410	Introduction to Nanophysics	4	

*Note: * Students pursuing a B. Sc. (Hons. with Research) in Physics will take UGR401 (4 credits) and UGR402 (8 credits) research courses instead of MAJ404 and MAJ408 & MAJ409, respectively.*