

**Degree Plan for B.Sc. in Physics**  
(with Medical Physics and Laser Physics Minors)

Minimum No. of Credits for the Degree Plan = 135					
University Requirements = 24 Credits					
Course Code	Course Name	Credit Hours	Contact Hours		Pre-requisites/ Co-requisites
			Theory	Practical	
ARAB100	Arabic Language I	3	3	0	
ARAB101	Arabic Language II	3	3	0	ARAB100
HIST150	Islamic Civilization	3	3	0	
ENGL150	English Language	3	3	0	
ENGL152	English Language II	3	3	0	ENGL150
ENGL155	Communication Skills	3	3	0	ENGL152
COMP101/L	Computer Skills	3	2	2	COMP-A,COMP-B, Digital Literacy
MNGT100	Entrepreneurship: Creativity and Innovation	3	3	0	
University Electives = 3 Credits					
College Requirements = 28 Credits					
MATH116	Pre-Calculus	4	3	2	
MATH211	Calculus I	4	3	2	MATH116
STAT101	Introduction to Statistics	4	3	2	
COMP151/L	Introduction to Algorithms	4	3	2	COMP101/L
CHEM101/L	General Chemistry I	4	3	2	
PHYS101/L	General Physics I	4	3	2	MATH116
PHYS150/L	General Physics II	4	3	2	PHYS101
College Electives = 6 Credits					
Department Requirements = 42 Credits					
PHYS204	Modern Physics	4	3	2	PHYS150/L
PHYS205/L	Experimental Methods in Electronics	3	2	2	PHYS150/L
PHYS207/L	Thermodynamics	4	3	2	PHYS150/L, MATH211
MATH212	Calculus II	3	2	2	MATH211
MATH215	Ordinary Differential Equations	3	2	2	MATH212
PHYS220	Introduction to Laser Science	3	2	2	PHYS204/L
PHYS256	Electromagnetism and Applications I	3	2	2	PHYS150, MATH215 (co-req)
PHYS260/L	Sound and Optics	4	3	2	PHYS101/L
PHYS301	Quantum Mechanics I	3	2	2	PHYS204/L, MATH215
PHYS311/L	Experimental Methods in Atomic & Nuclear Physics	3	2	2	PHYS205

Course Code	Course Name	Credit Hours	Contact Hours		Pre-requisites/ Co-requisites
			Theory	Practical	
PHYS365	Thermal and Statistical Physics	3	2	2	PHYS207/L, MATH215
PHYS404	Solid State Physics	3	2	2	PHYS301
PHYS405/L	Nuclear Science and Applications	3	2	2	PHYS311
<b>Department Electives = 32 Credits</b>					
<ul style="list-style-type: none"> <li>All students must choose at least 15 Credits from the Physics electives.</li> <li>Students may opt to take an additional 18 credits from Medical Physics or laser Physics electives.</li> <li>Courses from the Department of Mathematical and Physical Sciences may be taken as electives with written approval of the HOS/HOD.</li> </ul> <p>Students may opt to take any of the 15-credit approved university minors.</p>					
<b>Physics Elective Courses</b>					
PHYS103	Basic Astronomy	3	2	2	
PHYS152	Engineering Dynamics	3	3	0	PHYS101/L, MATH211
PHYS156	Engineering Statistics	3	3	0	PHYS101/L, MATH116
MATH245	Linear Algebra I	3	2	2	MATH116
PHYS269	Electrical and Magnetic Properties of Materials	3	3	0	PHYS150/L
PHYS303	Classical Mechanics I	3	3	0	PHYS101/L, MATH212
PHYS306	Electromagnetism and Applications II	3	2	2	PHYS256, MATH259
PHYS315	Radiation Health Physics	3	2	2	PHYS204
PHYS317	Optoelectronics	3	3	0	PHYS205
PHYS323	Acoustics and Vibrations	3	3	0	PHYS260
PHYS358/L	Computational Physics	3	2	2	MATH215, COMP222/L
PHYS362	Experimental Methods in Condensed Matter Physics	3	2	2	PHYS204/L
PHYS363	Classical Mechanics II	3	3	0	PHYS303, MATH245
PHYS370	Quantum Mechanics II	3	2	2	PHYS301
PHYS375	Materials Science	3	3	0	PHYS204
PHYS408	Semiconductors	3	3	0	PHYS311, MATH212
PHYS410	Solar Energy	3	3	0	PHYS311
PHYS467	Astrophysics	3	3	0	PHYS103
PHYS482	Special Topics in Physics I	3	3	0	Consent of Faculty
PHYS483	Special Topics in Physics II	3	3	0	Consent of Faculty

Course Code	Course Name	Credit Hours	Contact Hours		Pre-requisites/ Co-requisites
			Theory	Practical	
PHYS484	Special Topics in Physics III	3	3	0	Consent of Faculty
PHYS488	Internship Course	2	2	0	Completion of 90 C.H
PHYS490	Final Year Project	6	0	6	Completion of 90 C.H
<b>Medical Physics Electives</b>					
PHYS235	Ionizing and Non-Ionizing Radiation	3	2	2	PHYS204
PHYS289	Ultrasound and Applications	3	2	2	PHYS101/L
PHYS371	Medical Physics and Applications	3	3	0	PHYSL315
PHYS430	Medical Imaging	3	2	2	PHYSL315
PHYS465	Applied Spectroscopy	3	2	2	PHYS204, CHEM101/L
PHYS470	Radiology, X-ray and Dosimetry	3	2	2	PHYS315
PHYS486	Special Topics in Medical Physics	3	3	0	Consent of Faculty
<b>Laser Physics Electives</b>					
PHYS245	Laser Industrial Applications	3	3	0	PHYS220
PHYS330	Laser Interaction with Matter	3	3	0	PHYS220
PHYS379	Laser Medical Applications	3	3	0	PHYS330
PHYS380	Laser Communications	3	3	0	PHYS220
PHYS447	Laser Design	3	2	2	PHYS205
PHYS479	Laser Detectors and Photometry	3	3	0	PHYS404
PHYS487	Special Topics in Lasers	3	3	0	Consent of Faculty