M. Sc. Physics Syllabus

Note

- This syllabus is applicable from the academic year 2018-19 onwards.
- This syllabus was approved by the BOS in Physics on 12 April 2018 and passed by Academic Council on 15 May 2018.
- Paper PHO-317 “Introduction to Crystallography and X-ray Diffraction” was approved by the BOS in Physics on 8 February 2019 and passed by Academic Council on 8-9 March 2019.

Course Structure and List of papers

Semester I		
Course Code	Course Title	Number of credits
PHC-100*	Bridge course in Mathematical Methods	2
PHC-111	Mathematical Physics	4
PHC-112	Classical Mechanics	4
PHC-113	Electromagnetic Theory	4
PHO-114	Electronics Practical	2
PHO-105	Computer Programming with C	2
PHO-110	Computer Programming in Fortran 95	2
*Not included for the calculation of GPA, but should be completed successfully.		

Semester II		
Course Code	Course Title	Number of credits
PHC-116	Quantum Mechanics – I	4
PHC-117	Basic Electronics	4
PHC-118	Statistical Mechanics	4
PHO-119	General Physics Practical	4

Semester III		
Course Code	Course Title	Number of credits
PHO-301	Summer Fellowships	1
PHC-211	Quantum Mechanics – II	4
PHC-212	Nuclear physics and Elementary Particle Physics	4
PHO-213	Solid State Physics	4
PHO-214	Solid State Physics Practical	4

Semester IV		
Course Code	Course Title	Number of credits
PHO-302	Neutron physics	4
PHO-303	Superconductivity and superfluidity	4
PHO-304	X-ray spectroscopy	4
PHO-305	Electronics practical-II	4
PHO-306	Semiconductor physics	4
PHO-307	Dissertation	8
PHO-309	Physics of non-conventional energy sources	4
PHO-310	Numerical methods and Fortran parallel programming using open mp	4
PHO-311	Phase transitions and critical phenomena	4
PHO-312	Spectroscopic techniques in condensed matter physics	4
PHO-313	Physics of energy materials	4
PHO-314	Documentation using Latex	1
PHO-315	Nanoscience and Technology	4
PHO-316	Magnetism in Condensed Matter Physics	4
PHO-317	Introduction to Crystallography and X-ray Diffraction	4