



MIRPUR UNIVERSITY OF SCIENCE & TECHNOLOGY (MUST),

MIRPUR-10250, (AJK)-Pakistan

Department of Physics

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Scheme of Studies for BS Physics Program 2019 and onwards

Revised for the Sessions:	Session (19-23) and onwards
Duration:	8-14 Semesters (max 6 years)
Courses:	128 Credit Hours
Compulsory	22
General	21
Foundation	27
Major	49
Elective	09
Final Year Project/Special paper:	3+3=6
Total:	134 Credit Hours

Semester-I

Code	Title	Cr. Hrs.
PHY-1101	Mechanics (F-1)	04
*	(GOF-1)	03
PHY-1102	Lab-I (F-2)	01
COM-1105	Introduction to Computing (C-1)	03
ENG-1107	English-I (C-2)	03
MAT-1115	Calculus-I (C-3)	03
	Total	17

Semester-II

Code	Title	Cr. Hrs.
PHY-1203	Electricity and Magnetism (F-3)	04
PHY-1204	Heat and Thermodynamics (F-4)	03
PHY-1205	Lab-II (F-5)	01
COM-1205	Programming Fundamentals (GRF-1)	03
ENG-1207	English-II (C-4)	03
MAT-1215	Calculus II (C-5)	03
	Total	17

Semester-III

Code	Title	Cr. Hrs.
PHY-2306	Waves and Oscillations (F-6)	03
PHY-2307	Modern Physics (F-7)	03
ENG-2307	English-III (C-6)	03
PHY-2308	Lab-III (F-8)	01
*	(GOF-2)	03
MAT-2315	Linear Algebra (Math-III)	03
PS-2317	Pakistan Studies (C-7)	2

Semester-IV

Code	Title	Cr. Hrs.
PHY-2409	Optics (F-9)	03
PHY-2410	Lab-IV (F-10)	01
*	(GOF-3)	03
MAT-2415	Differential Equations (Math-IV)	03
STA-2420	Probability and Statistics (GRF-2)	03
ISL-2412	Islamic Studies (C-8)	02
PHY-2411	Computational Physics (F-11)	03

	Total	18		Total	18
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Semester-V

Code	Title	Cr. Hrs
PHY-3512	Mathematical Methods of Physics-I (M)	3
PHY-3513	Classical Mechanics (M)	4
PHY-3514	Electromagnetic Theory-I (M)	3
PHY-3515	Electronics-I (M)	3
PHY-3516	Lab-V (M)	2
	Total	15

Semester-VI

Code	Title	Cr. Hrs.
PHY-3617	Mathematical Methods of Physics-II (M)	3
PHY-3618	Quantum Mechanics – I (M)	3
PHY-3619	Electromagnetic Theory-II (M)	3
PHY-3620	Electronics-II (M)	3
PHY-3621	Solid State Physics-I (M)	3
PHY-3622	Lab-VI (M)	2
	Total	17

Semester-VII

Code	Title	Cr. Hrs
PHY-4723	Nuclear Physics (M)	3
PHY-4724	Quantum Mechanics – II (M)	3
PHY-4725	Atomic Physics (M)	3
PHY-4726	Solid State Physics-II (M)	3
PHY-4727	Lab-VII (M)	2
PHY-4899/47XX	Research Project/Special Paper (M)	3
	Total	17

Semester-VIII

Code	Title	Cr. Hrs.
PHY-4828	Thermal and Statistical Physics (M)	3
PHY-48XX	Elective course I	3
PHY-48XX	Elective course-II	3
PHY-48XX	Elective course –III	3
PHY-4899 /PHY-48XX	Research project/Special Paper(M)	3
	Total	15

*Code and subject shall be chosen from the list of GOF courses, subject to availability of faculty and suitability to the program need.

** Special paper shall be selected from the list of elective courses subject to availability of teacher and suitability to the program need

GRF = General subjects from Faculty of Natural and Applied Sciences

GOF = General subjects other than Faculty of Natural and Applied Sciences

List of (GOF) courses

S. No.	Code	Subject	S. No.	Code	Subject
1	ARA-0001	Arabic	7	KS-0013	Kashmir Studies
2	ECO-0006	Economics	8	MC-0014	Mass Communications
3	ETRE-0008	Entrepreneurship	9	OB-0016	Organizational Behavior
4	HRM-0009	Human Resource Management	10	PSY-0019	Psychology

5	IR-0010	International Relations	11	SOC-0021	Sociology
6	ITM-0011	Introduction to management			

List of Elective Courses:

(First and second 'X' represent the year and semester respectively. Selection of a course from the list shall be made on the basis of availability of relevant faculty and suitability to the program need)

S. No.	Codes	Title
1.	PHY-XX29	Astro Physics
2.	PHY-XX30	Atomic and Molecular Spectroscopy
3.	PHY-XX31	Computer Simulations in Physics
4.	PHY-XX32	Electronic Materials and Devices
5.	PHY-XX33	Environmental Physics
6.	PHY-XX34	Experimental Techniques in Particle and Nuclear Physics
7.	PHY-XX35	Fluid Dynamics
8.	PHY-XX36	Introduction to Materials Science
9.	PHY-XX37	Introduction to Nanotechnology
10.	PHY-XX38	Introduction to Photonics
11.	PHY-XX39	Introduction to Quantum Computing
12.	PHY-XX40	Laser Engineering
13.	PHY-XX41	Laser Physics
14.	PHY-XX42	Methods of Experimental Physics
15.	PHY-XX43	Particle Physics
16.	PHY-XX44	Plasma Physics
17.	PHY-XX45	Quantum Electronics
18.	PHY-XX46	Quantum Field Theory
19.	PHY-XX47	Quantum Information Theory
20.	PHY-XX48	Quantum Optics
21.	PHY-XX49	Research Methodology and Skill Enhancement
22.	PHY-XX50	Semiconductor Physics
23.	PHY-XX51	Surface Science