

**SCHEME OF STUDIES FOR BS PHYSICS (FOUR YEARS DEGREE PROGRAMME)**

2022-2025			2024-2027		
Existing			Proposed / Revised		
<b>SEMESTER I</b>			<b>SEMESTER I</b>		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-303	Mechanics	4(4-0)	PY-303	Mechanics	4(4-0)
ENG-301	Composition And Communication Skills	3(3-0)	<b>FA-310</b>	<b>Introduction to Arts and Humanities</b>	<b>2(2-0)</b>
MATH-303	Calculus-I	4(4-0)	MATH-303	Calculus-I	4(4-0)
CS-305	Introduction to Information and Communication	3(2-1)	<b>CS-305</b>	<b>Applications of Information and Communication</b>	<b>3(2-1)</b>
ESE-302	Principles of Energy Engineering	2(2-0)	<b>SSH-303</b>	<b>Ideology and Constitution of Pakistan</b>	<b>2(2-0)</b>
SSH-302	Pakistan Studies	2(2-0)	<b>MATH-408</b>	<b>Quantitative Reasoning-I</b>	<b>3(3-0)</b>
	<b>Total</b>	<b>18(17-1)</b>	<b>TGM-301</b>	<b>Tutorial Group Meeting for Soft Skills</b>	<b>No-Credit</b>
				<b>Total</b>	<b>18(17-1)</b>
<b>SEMESTER II</b>			<b>SEMESTER II</b>		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-304	Electricity and Magnetism	4(4-0)	PY-304	Electricity And Magnetism	4(4-0)
PY-306	Heat and Thermodynamics	3(3-0)	PY-306	Heat And Thermodynamics	3(3-0)
ENG-303	English-I (Functional English)	2(2-0)	<b>ENG-313</b>	<b>Functional English</b>	<b>3(3-0)</b>
MATH-305	Calculus-II	3(3-0)	MATH-305	Calculus-II	3(3-0)
ESE-402	Heat and Mass Transfer	3(2-1)	<b>PY-307</b>	<b>Fundamentals of Natural Sciences</b>	<b>3(2-1)</b>
IS-401/SSH-402	Islamic Studies/ Ethics	3(3-0)	<b>STAT-408</b>	<b>Quantitative Reasoning-II</b>	<b>3(3-0)</b>
	<b>Total</b>	<b>18(17-1)</b>	<b>TGM-302</b>	<b>Tutorial Group Meeting for Soft Skills</b>	<b>No-Credit</b>
				<b>Total</b>	<b>19(18-1)</b>

SEMESTER III			SEMESTER III		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-402	Waves And Oscillations	3(3-0)	PY-402	Waves And Oscillations	3(3-0)
PY-403	Modern Physics	3(3-0)	PY-403	Modern Physics	3(3-0)
PY-404	Physics Lab-I	3(0-3)	PY-404	Physics Lab-I	3(0-3)
MATH-404	Linear Algebra	3(3-0)	MATH-404	Linear Algebra	3(3-0)
ENG-304	English-II (Communication Skills)	2(2-0)	ENG-314	Expository Writing	3(3-0)
CHEM-408	Fundamentals Of Physical Chemistry	4(3-1)	IS-402/SSH-403	ترجمة القرآن/Interfaith Harmony	No-Credit
IS-402	ترجمة القرآن/	1(1-0)	BMS-402	Entrepreneurship	2(2-0)
	<b>Total</b>	<b>19(15-4)</b>	TGM-401	Tutorial Group Meeting for Soft Skills	No-Credit
				<b>Total</b>	<b>17(14-3)</b>
SEMESTER IV			SEMESTER IV		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-406	Optics	3(3-0)	PY-406	Optics	3(3-0)
PY-407	Physics Lab-II	3(0-3)	PY-407	Physics Lab-II	3(0-3)
MATH-503	Ordinary Differential Equations	3(3-0)	MATH-503	Ordinary Differential Equations	3(3-0)
STAT-301	Introductory Statistics	4(4-0)	EDU-306	Civics and Community Engagement	2(2-0)
CHEM-409	Fundamentals of Analytical Chemistry	3(2-1)	CHEM-409	Fundamentals of Analytical Chemistry	3(2-1)
IS-403	روحانیت	1(1-0)	SOC-311	Introduction To Sociology	2(2-0)
	<b>Total</b>	<b>17(13-4)</b>	IS-401/SSH-306	Islamic Studies/ Ethics	2(2-0)
			IS-403/SSH-404	روحانیت/ Moral Philosophy	No-Credit
			TGM-402	Tutorial Group Meeting for Soft Skills	No-Credit
				<b>Total</b>	<b>18(14-4)</b>

SEMESTER V			SEMESTER V		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-502	Methods Of Mathematical Physics	3(3-0)	PY-502	Methods Of Mathematical Physics-I	3(3-0)
PY-503	Classical Mechanics	3(3-0)	PY-503	Classical Mechanics	3(3-0)
PY-504	Electrodynamics-I	3(3-0)	PY-504	Electrodynamics-I	3(3-0)
PY-505	Electronics-I	3(3-0)	PY-505	Electronics-I	3(3-0)
PY-506	Physics Lab-III	3(0-3)	PY-506	Physics Lab-III	3(0-3)
PY-511	Statistical Physics	3(3-0)	PY-511	Statistical Physics	3(3-0)
	<b>Total</b>	<b>18(15-3)</b>	<b>TGM-501</b>	<b>Tutorial Group Meeting for Soft Skills</b>	<b>No-Credit</b>
				<b>Total</b>	<b>18(15-3)</b>
SEMESTER VI			SEMESTER VI		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-507	Methods Of Mathematical Physics-II	3(3-0)	PY-507	Methods Of Mathematical Physics-II	3(3-0)
PY-508	Electronics-II	3(3-0)	PY-508	Electronics-II	3(3-0)
PY-509	Electrodynamics-II	3(3-0)	PY-509	Electrodynamics-II	3(3-0)
PY-510	Quantum Mechanics-I	3(3-0)	PY-510	Quantum Mechanics-I	3(3-0)
PY-512	Modern Physics (Lab-IV)	3(0-3)	PY-512	Modern Physics (Lab-IV)	3(0-3)
PY-513	Solid State Physics-I	3(3-0)	PY-513	Solid State Physics-I	3(3-0)
	Elective Course-I	3(3-0)	<b>TGM-502</b>	<b>Tutorial Group Meeting for Soft Skills</b>	<b>No-Credit</b>
	<b>Total</b>	<b>21(18-3)</b>		<b>Total</b>	<b>18(15-3)</b>

SEMESTER VII			SEMESTER VII		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-601	Entrepreneurships For Science Students	1(1-0)	PY-601	Atomic And Molecular Physics	3(3-0)
PY-602	Atomic And Molecular Physics	3(3-0)	PY-602	Quantum Mechanics-II	3(3-0)
PY-603	Quantum Mechanics-II	3(3-0)	<b>PY-603/PY-604</b>	Nuclear Physics/Introduction to Relativity	3(3-0)
PY-604/PY-605	Nuclear Physics/Introduction to Relativity	3(3-0)	<b>PY-605</b>	Advanced Electronics (Lab-V)	3(0-3)
PY-606	Advanced Electronics (Lab-V)	3(0-3)	<b>PY-606</b>	Solid State Physics-II	3(3-0)
PY-607	Solid State Physics-II	3(3-0)	<b>PY-6XX</b>	Elective Course-I	3(3-0)
	Elective Course-II	3(3-0)	<b>TGM-601</b>	<b>Tutorial Group Meeting for Soft Skills</b>	<b>No-Credit</b>
	<b>Total</b>	<b>19(16-3)</b>		<b>Total</b>	<b>18(15-3)</b>
SEMESTER VIII			SEMESTER VIII		
Course No.	Title of the Course	Credit Hours	Course No.	Title of the Course	Credit Hours
PY-621	Technical Report/Internship	6(0-6)	<b>PY-620</b>	<b>Seminar</b>	<b>1(1-0)</b>
	<b>Total</b>	<b>6(0-6)</b>	PY-621	Internship	3(0-3)
			<b>PY-622</b>	<b>Capstone Project</b>	<b>3(0-3)</b>
			<b>PY-6XX</b>	Elective Course-II	3(3-0)
				<b>Total</b>	<b>10(4-6)</b>
	<b>Grand Total</b>	<b>136(111-25)</b>		<b>Grand Total</b>	<b>136(112-24)</b>