

BS Computational Physics

Course Title	Course Code	Course Type	Credit Hour
Semester 1			
<u>GEN(NS)</u>		General	<u>3</u>
Functional English	GENG-101	General	<u>3</u>
Civics and Community Engagement	GCCE-101	General	<u>2</u>
Islamic Studies / Ethics (for Non-Muslims)	GISL-101 / GETH-101	General	<u>2</u>
Calculus I	CPHY-101	Major	<u>3</u>
Mechanics	CPHY-111	Major	<u>3</u>
Tarjuma-e-Quran	HQ-001	Compulsory	<u>0</u>
			Total Credit Hours 16
Semester 2			
<u>GEN(AH)</u>		General	<u>2</u>
Quantitative Reasoning (I)	GQR-101	General	<u>3</u>
Entrepreneurship	GENT-101	General	<u>2</u>
Ideology and Constitution of Pakistan	GICP-101	General	<u>2</u>
Calculus II	CPHY-102	Major	<u>3</u>
Waves and Oscillations	CPHY-112	Major	<u>3</u>
Tarjuma-e-Quran	HQ-002	Compulsory	<u>1</u>
Physics Lab I	CPHY-113	Major	<u>1</u>
			Total Credit Hours 17
Semester 3			
Applications of Information and Communication Technologies	GICT-201	General	<u>3</u>
Expository Writing	GENG-201	General	<u>3</u>
Thermal Physics	CPHY-241	Major	<u>3</u>
Linear Algebra	CPHY-203	Major	<u>3</u>
Electricity and Magnetism	CPHY-221	Major	<u>3</u>
Tarjuma-e-Quran	HQ-003	Compulsory	<u>0</u>
			Total Credit Hours 15
Semester 4			
<u>GEN(SS)</u>		General	<u>2</u>
Quantitative Reasoning (II)	GQR-202	General	<u>3</u>
Physics Lab II	CPHY-214	Major	<u>1</u>
Differential Equations	CPHY-204	Major	<u>3</u>
Modern Physics	CPHY-231	Major	<u>3</u>
Tarjuma-e-Quran	HQ-004	Compulsory	<u>1</u>
Introduction to Scientific Computation	CPHY-281	Major	<u>3</u>
			Total Credit Hours 16
Semester 5			
Numerical Computing	ACS-302	Interdisciplinary	<u>3</u>
Computer Programming	ACS-301	Interdisciplinary	<u>3</u>
Mathematical Methods for Physics I	CPHY-371	Major	<u>3</u>
Electromagnetic Theory I	CPHY-322	Major	<u>3</u>
Classical Mechanics	CPHY-315	Major	<u>3</u>
Tarjuma-e-Quran	HQ-005	Compulsory	<u>0</u>
Electronics	CPHY-342	Major	<u>3</u>
			Total Credit Hours 18
Semester 6			
Modern Physics Lab	CPHY-333	Major	<u>1</u>
Data Science	ACS-303	Interdisciplinary	<u>3</u>
Mathematical Methods for Physics II	CPHY-372	Major	<u>3</u>
Quantum Mechanics I	CPHY-332	Major	<u>3</u>
Electromagnetic Theory II	CPHY-323	Major	<u>3</u>
Tarjuma-e-Quran	HQ-006	Compulsory	<u>1</u>
Digital Electronics	CPHY-343	Major	<u>2</u>
			Total Credit Hours 16
Semester 7			
Fieldwork / Internship		Major	<u>3</u>
Elective I	XXX-4xx	Major	<u>3</u>
Computational Physics Simulation I	CPHY-482	Major	<u>3</u>
Statistical Physics	CPHY-444	Major	<u>3</u>
Quantum Mechanics II	CPHY-434	Major	<u>3</u>
Tarjuma-e-Quran	HQ-007	Compulsory	<u>0</u>
Artificial Intelligence	ACS-405	Interdisciplinary	<u>3</u>
			Total Credit Hours 18
Semester 8			
Capstone Project		Major	<u>3</u>
Elective II	XXX-4xxx	Major	<u>3</u>
Computational Physics Simulation II	CPHY-483	Major	<u>3</u>
Solid State Physics	CPHY-445	Major	<u>3</u>
Nuclear Physics	CPHY-451	Major	<u>3</u>
Tarjuma-e-Quran	HQ-008	Compulsory	<u>1</u>
Quantum Computing	ACS-404	Interdisciplinary	<u>3</u>
			Total Credit Hours 19

Signature