



THE BEGUM NUSRAT BHUTTO WOMEN UNIVERSITY, SUKKUR

Scheme of Studies

BS Physics (4 Years)

BS Physics includes eight regular semesters. A minimum of 130 credit hours are required to qualify for this degree.

SEMESTER – I (YEAR ONE)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1	ECC 101	English Composition & Comprehension	3-0	-
2	EDG 101	General Psychology	3-0	-
3	ISL 101 /ETH 101	Islamic Studies / Ethics	2-0	–
4	PHY 105	Mechanics	3-1	-
5	MTH 101	Calculus & Analytic Geometry	3-0	-
6	<i>MTH 104</i>	<i>College Mathematics I*</i>	<i>0-0*</i>	
		Sub Total Credit Hrs.	15 (14-1)	

**Students from Pre-medical group in HSC*

SEMESTER – II (YEAR ONE)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1	CSK 101	Communication Skills	3-0	ECC 101
2	MGT 306	Organizational Behavior	3-0	–
3	LCT 101	Logic and Critical Thinking	3-0	–
4	PHY 106	Waves & Oscillations	3-1	PHY 105
5	MTH 102	Linear Algebra	3-0	MTH 101
6	<i>MTH 105</i>	<i>College Mathematics II*</i>	<i>0-0*</i>	<i>MTH 104</i>
		Sub Total Credit Hrs.	16 (15-1)	

**Students from Pre-medical group in HSC*



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SEMESTER – III (YEAR TWO)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1	TWP 201	Technical Writing and Presentation Skills	3-0	CSK 101
2	PST 101	Ideology & Constitution of Pakistan	2-0	–
3	FLL 101	Foreign Language (Arabic)	3-0	-
4	PHY 211	Optics	2-1	PHY 106
5	MTH 203	Differential Equations	3-0	MTH 102
6	PHY 201	Electricity & Magnetism	3-1	
		Sub Total Credit Hrs.	17(16-1)	

SEMESTER – IV (YEAR TWO)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1	PHY 212	Electromagnetisms I	3-0	PHY 201
2	PHY 221	Plasma Physics	3-0	–
3	PHY 222	Classical Mechanics	3-0	PHY 105 & 106
4	PHY 213	Modern Physics	2-1	PHY 105 & 106
5		Elective	3-0	–
6	PHY 224	Heat & Thermodynamics	3-0	
		Sub Total Credit Hrs.	18(17- 1)	

SEMESTER – V (YEAR THREE)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1	PHY 321	Electromagnetisms II	3-0	PHY 212
2	PHY 322	Fluid Mechanics	3-0	–
3		Elective	3-0	–
4	PHY 323	Basic Electronics	3-1	–
5		Elective	3-0	–
		Sub Total Credit Hrs.	16(15-1)	



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SEMESTER – VI (YEAR THREE)

Sr. No	Course Code	Course Title	Credit Hours	Prerequisite
1		Elective	3-0	–
2	PHY 325	Quantum Mechanics I	3-0	–
3	PHY 326	Mathematical Methods for Physics I	3-0	–
4	PHY 324	Digital Electronics	3-1	PHY 323
5		Elective	3-0	–
		Sub Total Credit Hrs.	16(15-1)	

SEMESTER – VII (YEAR FOUR)

S. No	Course Code	Course Title	Credit Hours	Prerequisite
1	PHY 431	Introduction to Computational Physics	3-1	–
2	PHY 498	Research Project I	0-3	–
3	PHY 426	Quantum Mechanics II	3-0	PHY 325
4	PHY 427	Mathematical Methods for Physics II	3-0	PHY-326
5	PHY 432	Atomic & Nuclear Physics	3-1	PHY 213
		Sub Total Credit Hrs.	17(12–5)	

SEMESTER – VIII (YEAR FOUR)

S. No	Course Code	Course Title	Credit Hours	Prerequisite
1	PHY 433	Statistical Physics	3-0	
2	PHY 434	Solid State Physics	3-0	PHY 223
3		Elective	3-0	
4		Elective	3-0	
5	PHY 499	Research Project II	0-3	PHY 498
		Sub Total Credit Hrs.	15(12-3)	

GRAND TOTAL: 15+16+17+18+16+16+17+15= 130



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Choose 7 electives from the following list:

S. No	Course Code	Course Title	Credit Hours
1	PHY 342	Quantum Field Theory	3-0
2	PHY 328	Special Relativity	3-0
3	PHY 341	Astrophysics	3-0
5	PHY 331	Introduction to Nanotechnology	3-0
6	PHY 329	General Relativity	3-0
7	PHY 343	Computer Simulations in Physics	2-1
9	PHY 449	Biophysics	3-0
10	PHY 327	Medical Physics	2-1
11	PHY 336	Fiber Optics	3-0
12	PHY 330	Lasers	2-1
13	PHY 332	Material Science	3-0
14	PHY 344	Soft Matter Physics	3-0
15	PHY 334	Photonics	3-0
16	PHY 436	Advanced Solid State Physics	3-0
17	PHY 450	Quantum Information Theory	3-0
18	PHY 223	Condensed Matter Physics	3-0
19	PHY 435	Particle Physics	3-0