

Veer Bahadur Singh Purvanchal University
Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research
Syllabus of M. Sc. Physics as per NEP-2020
Courses and Credit Index

Semester -VII

Sr. No.	Course Title and Code	Credit Structure			
		L	T	P/D	C
Four Compulsory Theory Papers					
1.	Mathematical Physics (B0107U1T)	3	1	0	4
2.	Classical Mechanics (B0107U2T)	3	1	0	4
3.	Electrodynamics and Relativity (B0107U3T)	3	1	0	4
4.	Quantum Mechanics – I (B0107U4T)	3	1	0	4
Minor elective Course from other faculty					
5.	*Minor elective course from Other department/faculty				4
Lab and Dissertation Courses					
6.	General Lab. (B0107U5P) or Electronics Lab. (B0107U6P)			8	4
7.	Dissertation Phase 1: Literature Survey and to identify the problem (B0107U7R)			8	4
Total credits earned in Semester-I ΣCi				24 or 28[#]	
Minor elective (value added) course for students of other departments					
8.	^s Fundamentals of Physics (B0107U8M)	4	0	0	4

Semester – VIII

Sr. No.	Course Title and Code	Credit Structure			
		L	T	P/D	C
Four Compulsory Theory Papers					
1.	Quantum Mechanics – II (B0108U1T)	3	1	0	4
2.	Statistical Mechanics (B0108U2T)	3	1	0	4
3.	Solid State Electronics (B0108U3T)	3	1	0	4
4.	Atomic and Molecular Physics (B0108U4T)	3	1	0	4
Minor Course from other faculty					
5.	*Minor Course from other department/faculty				4
Lab. and Dissertation Courses					
6.	General Lab. (B0108U6P) or Electronics Lab. (B0108U5P)			8	4
7.	Dissertation Phase 1: Data Collection on the Problem (B0108U7R)			8	4
Total credits earned in Semester-II ΣCi				24 or 28[#]	
Minor elective (value added) course for students of other departments					
8.	^s Frontiers of Physics (B0108U8M)	4	0	0	4

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Semester – IX

Sr. No.	Course Title and Code	Credit Structure			
		L	T	P/D	C
Two Compulsory Theory Papers					
1.	Solid State Physics (B0109U1T)	3	1	0	4
2.	Nuclear and Particle Physics (B0109U2T)	3	1	0	4
	Two Theory Papers from any of the three Specialization	Credit Structure for EACH PAPER			
3.	(i) Analog & Digital Electronics (B0109U3T), (ii) Laser Spectroscopy (B0109U5T) or (iii) Condensed Matter Physics-I (B0109U7T)	3	1	0	4
4.	(i) Microwaves (B0109U4T), (ii) Electronic Spectra of Diatomic Molecules (B0109U6T) or (iii) Condensed Matter Physics-II (B0109U8T)	3	1	0	4
One Lab. Course from the chosen specialization and Dissertation					
5.	(i) Electronics Lab. (B0109U9P), (ii) Spectroscopy Lab. (B0109U10P) or (iii) Condensed Matter Physics Lab. (B0109U11P)			8	4
6.	Dissertation Phase 3: Data Analysis (B0109U12R)			8	4
Total credits earned in Semester-III ΣCi					24

Semester – X

Sr. No.	Course Title and Code	Credit Structure			
		L	T	P/D	C
One Compulsory Theory Paper					
1.	Experimental Techniques and Control Systems (B0110U1T)	3	1	0	4
	One elective paper from three papers				
2.	(i) Computational Physics with Python (B0110U2T)	2	1	1	4
	(ii) Advanced Electrodynamics and Second Quantization (B0110U3T) or	3	1	0	4
	(iii) Group Theory (B0110U4T)	3	1	0	4
	Two Theory Papers from any of the three Specialization	Credit Structure for EACH PAPER			
3.	(i) Microprocessor (B0110U5T), (ii) Advanced Atomic Spectroscopy (B0110U7T) or (iii) Condensed Matter Physics-III (B0110U9T)	3	1	0	4
4.	(i) Physics of Semiconductor Devices (B0110U6T), (ii) IR & Raman Spectra of Polyatomic molecules (B0110U8T) or (iii) Condensed Matter Physics-IV (B0110U10T)	3	1	0	4
One Lab. Course from the chosen specialization and Dissertation					
5.	(i) Electronics Lab. (B0110U11P), (ii) Spectroscopy Lab. (B0110U12) or (iii) Condensed Matter Physics Lab. (B0110U13P)			8	4
6.	Dissertation Phase 4: Final Report submission and			8	4

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	Presentation. (B0110U14R)				
Total credits earned in Semester-III ΣCi					24

* - Students of M. Sc. (Physics) programme have to opt and complete one minor course of 4 credits offered by other departments of other faculties in Semester VII or VIII.

- Credit of one minor course is accounted for.

\$ - Students of other departments can opt for minor (value added) courses offered at our department.

Students will earn total of 52 credits (24+28 or 28+24) in first year and 48 credits (24+24) in final (second) year of M. Sc. (Physics) programme.

A. Rules for Completion of Course:

Sr. No.	Grades Scores in Individual Courses	Status of Promotion	Eligibility of Completion of Course
1.	'P' or above in all courses/papers	Passed	---
2.	Below 'P' in one or two Courses/papers	Eligible for SE	Second Exam. in which scored below 'P' Grade
3.	Below 'P' in more than two Courses	Failed*	All courses as Ex-student for the semester

* The pass marks in each semester shall be (i) 36% marks in each theory paper, and (ii) 36% marks in practical examination examinations.

B. Grades and Grade Points:

Sr.	Percentage of Marks Obtained	Letter Grade	Grade Point (Gi)	Classification
1.	90% or above	O	10	Outstanding
2.	80% or above but below 90%	A+	9	Excellent
3.	70% or above but below 80%	A	8	Very Good
4.	60% or above but below 70%	B+	7	Good
5.	50% or above but below 60%	B	6	Above Average
6.	40% or above but below 50%	C	5	Average
7.	36% or above but below 40%	P	4	Passed
8.	Below 36%	F	0	Failed
9.	Absent	Ab	0	Absent

C. Formulae: $C_{pc} = C_i \times G_i$; $SGPA = \frac{\Sigma C_{pc}}{\Sigma C_i}$; $CGPA = \frac{\Sigma (SGPA \times \Sigma C_i)}{\Sigma (\Sigma C_i)}$

D. Abbreviations used in Grade Card:

(Ci) Credit Index; (Gi) Grade Point; (Cpc) Credit Points in the Course;
 (SGPA) Semester Grade Point Average; (CGPA) Consolidated Grade Point Average

E. The Multiplication factor for conversion of obtained CGPA into obtained percentage will be 9.5.

F. Duration for completion of the Programme will be "Duration of the Programme + 2 years".