

Branch Code: PH21

Dual Degree (B.S & M.S) in Physics 2021 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Functions of Several Variables	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	CY1001	Chemistry I	3	1	0	0	6	10	S
4	PH1050	Foundation of Computational Physics	2	1	0	1	8	12	E
5	PH1080	Thermodynamics	3	1	0	0	6	10	P
6	PH1030	Physics Lab	0	0	0	3	1	4	S
7	GN1101	Life Skills I	0	0	0	0	2	0	
8	ID1200	Ecology and Environment	2	0	0	0	0	0	
		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	2	0	
		Credits for semester 1	17	4	0	6	35	56	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1102	Series and Matrices	3	1	0	0	6	10	S
2	PH1020	Physics II	3	1	0	0	6	10	S
3	CY1051	Chemistry II	3	0	0	0	6	9	S
4	CY1002	Chemistry Lab	0	0	0	3	0	3	S
5	PH1040	Physics Lab II	0	0	0	3	1	4	S
6	HSE-1	Humanities Elective - I	3	0	0	0	6	9	H
7	GN1102	Life Skills II	0	0	0	0	1	0	
8		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	3	0	
9	PH2170	Basic Electronics	3	0	0	0	6	9	P
		Credits for semester 2						54	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EP2110	Introduction to Mathematical Physics	3	1	0	0	6	10	P
2	MAE-1	Mathematics Elective-I	3	0	0	0	6	9	S
3									
4	HSE-2	Humanities Elective - II	3	0	0	0	6	9	H
5	PH2050	Physics Lab - III	0	0	0	6	2	8	P
6									
		Total (Semester-3)						36	0

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH2070	Introduction to Biophysics	3	0	0	0	6	9	P
2	HSE-3	Humanities Elective - III	3	0	0	0	6	9	H
3	MAE-2	Mathematics Elective-II	3	0	0	0	6	9	S
4	FE 1	Free Elective-1	3	0	0	0	6	9	F
5	FE 2	Free Elective -2	3	0	0	0	6	9	F
6	PH2080	Physics Lab - IV	0	0	0	6	2	8	P
		Total (Semester-4)	15	0	0	6	32	53	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	BT1010	Life Sciences	3	0	0	0	6	9	S
2	PH5030	Classical Mechanics	3	1	0	0	6	10	P
3	PH5100	Quantum Mechanics - I	3	1	0	0	6	10	P
4	PH5040	Electronics	3	0	0	0	6	9	P
5	PH5050	Mathematical Physics-II	3	0	0	0	6	9	P
6	PH5060	Physics Lab - I (PG)	0	0	0	9	3	12	P
		Total (Semester-5)	12	2	0	9	27	59	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH5020	Electromagnetic Theory	3	1	0	0	6	10	P
2	PH5080	Statistical Physics	3	0	0	0	6	9	P
3	PH5160	Condensed Matter Physics -I	3	1	0	0	6	10	P
4	PH5170	Quantum Mechanics - II	3	0	0	0	6	9	P
5	FE-3	Free Elective - 3	3	0	0	0	6	9	F
	PH5120	Physics Lab - II (PG)	0	0	0	9	3	12	P
		Total (Semester-6)	15	2	0	9	33	59	

Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
	PH4500	Summer Internship	0	0	0	0	20	0	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PHE-1	DP-I Department Elective-I**	3	0	0	0	6	9	P
2	PHE-2	DP-II Department Elective-II**	3	0	0	0	6	9	P
3	PHE-3	DP-III Department Elective-III	3	0	0	0	6	9	P
4	PH5410	Nuclear, Atomic and Molecular Physics	3	1	0	0	6	10	P
5	FE-4	Free Elective - 4	3	0	0	0	6	9	F
6	PH5270	PH5060: Physics Lab - III (PG)	1	0	0	6	2+2	11	P
7		Total (Semester-7)	16	1	0	6	30	57	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PHE-4	DP-12 Credit Elective-IV (Experimental / Computational Stream) *	3	0	0	3	6	12	P
2	PHE-5	DP - V Department Elective - V	3	0	0	0	6	9	P
3	PHE-6	DP - VI Department Elective VI	3	0	0	0	6	9	P
4	FE-5	Free Elective -5	3	0	0	0	6	9	F
5	PHE-7	DP-VII Course OR Elective Mini Project [§]	0	0	0	0	9	9	P
6	PH5400	Viva-Voce	0	0	0	0	3	3	P
7	HS3050	Professional Ethics	2	0	0	0	0	0	H
		Total (Semester-8)	14	0	0	3	36	51	

Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH5221	Summer Project	0	0	0	0	15	15	P
		Total						15	

Semester 9

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
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1	PHE - 8	Departmental Elective - VIII	3	0	0	0	6	9	P
2	FE-6	Free Elective - 6	3	0	0	0	6	9	F
3	FE-7	Free Elective - 7	3	0	0	0	6	9	F
4	PH5222	Project	0	0	0	0	30	30	P
5		Total (Semester-9)	9	0	0	0	48	57	

Semester 10

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE-8	Free Elective - 8	3	0	0	0	6	9	F
2	PH5224	Project	0	0	0	0	44	44	P
3	PH5400+	Comprehensive Viva-Voce	0	0	0	0	4	4	P
		Total (Semester-10)	3	0	0	0	54	57	

Semester	I	II	III	IV	V	VI	VII	VIII	IX	Sum	X	Total
Credits	56	54	36	53	59	59	57	51	57	15	57	554

Category	Engineering (E)	Professional (P) Core+Elective+Project	Humanities (H)	Sciences (S)	Un-allotted credits	Total
Credits	12	182+75+89	27	97	72	554

18 (Science) + 72 (FE) + 27 (Hum.) + 75 (Dept. P Elec.) + 89 (DD Project)
= 277/554
= 50 % Electives

Total no. of S credits	97
Total no. of E credits	12
Total no. of P credits	346 [182 core + 89 project + 75 electives]
Total no. of F elective credits	72
Total no. of H elective credits	27
Total no. of S elective credits	18

MICRO-DETAILS:

- * Choice between PH5720 Numerical Methods and Programming / PH 5520 Advanced Electronics for pursuing either experimental or computational streams of specialization.
- ** PHE-1,2: Student has to do any 2 out of the following 3 courses
 1. CMP-2
 2. Optics & Photonics
 3. HEP)
- § Student can do Mini Project (counted as Elec) or any other Dept. Elective Course

BTech (Honours): (Total credit requirement: 554 + 27 = 581)

- **Eligibility:** minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course. They need to maintain these conditions until graduation.
- **Extra credit requirement:** 27 elective credits over and above regular program. These credits **have** to be completed in VI, VII and VIII semesester.