

**SCHEME
OF
EXAMINATION**

Under Choice Based Credit System (CBCS)

For

B.Sc. (Hons.) Physics- 3 Years
(w.e.f. Session 2019-20)



UTTARANCHAL
UNIVERSITY

**UTTARANCHAL UNIVERSITY,
DEHRADUN**

SEMESTER – I									
S.No	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP-101	Mathematical Physics -I	5-1-0	6	60	40	-	-	100
2	TBHP-102	Mechanics	4-0-0	4	60	40	-	-	100
3	TBHG-103 (1-2)	Generic Elective-1	4-0-0	4	60	40	-	-	100
4	TBEC-104/TBES-104	English Communication/ Environmental Science	2-0-0	2	60	40	-	-	100
5	PBHP-151	Mechanics Lab	0-0-4	2			25	25	50
6	PBHG-152 (1-2)	Generic Elective-1 Lab	0-0-4	2			25	25	50
7	PBMP-153	Minor Project & Presentation-I	0-0-2	1			25	25	50
Total for 1 Sem.			15-1-10	21					550

SEMESTER – II									
S.No	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP-201	Electricity & Magnetism	4-0-0	4	60	40	-	-	100
2	TBHP-202	Waves & Optics	4-0-0	4	60	40	-	-	100
3	TBHG-203 (1-2)	Generic Elective-2	4-0-0	4	60	40	-	-	100
4	TBES-204/ TBEC-204	Environmental Science / English Communication	2-0-0	2	60	40	-	-	100
5	TBHE-205	Human Ethics and Professional Values	2-0-0	2	60	40	-	-	100
6	PBHP-251	Electricity & Magnetism Lab	0-0-4	2			25	25	50
7	PBHP-252	Waves & Optics Lab	0-0-4	2			25	25	50
8	PBHG-253 (1-2)	Generic Elective-2 Lab	0-0-4	2			25	25	50
Total			16-0-12	22					650
Total for 1 & 2 Sem.				43					1200

SEMESTER – III									
S.No	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP- 301	Mathematical Physics- II	5-1-0	6	60	40	-	-	100
2	TBHP-302	Thermal Physics	4-0-0	4	60	40	-	-	100
3	TBHP -303	Digital Systems & Applications	4-0-0	4	60	40	-	-	100
4	TBHM-304 (1-2)	Generic Elective-3	4-0-0	4	60	40	-	-	100
5	TBHP- 305 (1-3)	SEC-1(Select any one from the list)	2-0-0	2	60	40	-	-	100
6	PBHP-351	Thermal Physics Lab	0-0-4	2	-	-	25	25	50
7	PBHP-352	Digital Systems & Applications Lab	0-0-4	2	-	-	25	25	50
8	PBHM-353 (1-2)	Generic Elective-3 Lab	0-0-4	2	-	-	25	25	50
9	PBMP-354	Minor Project & Presentation-II	0-0-2	1	-	-	25	25	50
Total			19-1-14	27					700
Total for 1 , 2 & 3 Semesters				70					1900

SEMESTER – IV									
S.No	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP-401	Mathematical Physics- III	5-1-0	6	60	40	-	-	100
2	TBHP -402	Elements of Modern Physics	4-0-0	4	60	40	-	-	100
3	TBHP-403	Analog Systems & Applications	4-0-0	4	60	40	-	-	100
4	TBHM-404 (1-2)	Generic Elective-4	4-0-0	4	60	40	-	-	100
5	TBHP-405 (1-3)	SEC-2 (<i>Select any one from the list</i>)	2-0-0	2	60	40	-	-	100
6	TBPD-406	PDP, Quantitative aptitude & Reasoning Skills*	2-0-0	0		50	-	-	--
7	PBHP-451	Elements of Modern Physics Lab	0-0-4	2	-	-	25	25	50
8	PBHP-452	Analog Systems & Applications Lab	0-0-4	2	-	-	25	25	50
9	PBHM-453 (1-2)	Generic Elective-4 Lab	0-0-4	2			25	25	50
10	PBMP-454	Minor Project & Presentation-III	0-0-2	1	-	-	25	25	50
Total			21-1-14	27					700
Total for 1, 2, 3 & 4 Semesters				97					2600

*It is compulsory to qualify PDP/Reasoning Skill paper (non-credit) to attain degree of the course. The qualifying marks are 50%.

SEMESTER – V									
S.No	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP- 501	Quantum Mechanics and applications	5-1-0	6	60	40	-	-	100
2	TBHP-502	Solid State Physics	4-0-0	4	60	40	-	-	100
3	TBHP-503(1-2)	DSE-1(<i>Select any one from the list</i>)	4-0-0	4	60	40	-	-	100
4	TBHP-504(1-2)	DSE-2(<i>Select any one from the list</i>)	5-1-0	6	60	40	-	-	100
5	PBHP-551	Solid State Physics Lab	0-0-4	2	-	-	25	25	50
6	PBHP-552 (1-2)	DSE-1 Lab	0-0-4	2	-	-	25	25	50
7	PBSM-553	Seminar Presentation (Swachh Bharat Mission/ as per UGC guidelines/ other)/ SWAYAM / MOOC Courses	0-0-4	2	-	-	50	50	100
Total			18-2-12	26					600
Total for 1, 2, 3, 4 & 5 Semesters				123					3200

SEMESTER – VI									
S.No.	Code	Paper Title	L-T-P	Credit	Theory		Practical		Total
					End sem.	Sess.	End sem.	Sess.	
1	TBHP- 601	Electromagnetic Theory	4-0-0	4	60	40	-	-	100
2	TBHP-602	Statistical Mechanics	5-1-0	6	60	40	-	-	100
3	TBHP-603(1-2)	DSE-3 (<i>Select any one from the list</i>)	5-1-0	6	60	40	-	-	100
4	PBHP- 651	Electromagnetic Theory Lab	0-0-4	2	-	-	25	25	50
5	PBHD-652	DSE-4 (Dissertation)	0-0-12	6			100	50	150
	TBHO-604	Optoelectronics	4-0-0		60	40			
	PBHO-653	Optoelectronics Lab	0-0-4				25	25	
	TBHN-604	DSE-4 (Nano Materials and Applications)	4-0-0		60	40	-	-	
	PBHN-654	DSE-4 (Nano Materials and Applications Lab)	0-0-4				25	25	
Total			14-2-16/ 18-2-08	24					500
Total for 1, 2, 3, 4, 5 & 6 Semesters				147					3700

Generic Electives: (Exactly two papers from strictly two disciplines) – GE-1 to GE-4:

1. Computer Science
 2. Mathematics
 3. **Chemistry**
- Any other discipline of importance

Skill Enhancement Courses: (2 papers to be selected) – SEC-1 to SEC-2

SEC-1 [TBHP- 305(1) to TBHP- 305(3)]:

1. Electrical circuit network Skills
2. Mechanical Drawing
3. Energy Studies

SEC-2 [TBHP-405(1) to TBHP-405(3)]:

1. Renewable Energy and Energy harvesting
2. Weather Forecasting
3. Intellectual Property Right

Discipline Specific Electives: (4 papers to be selected) – DSE-1 to DSE-4

DSE-I [TBHP-503(1)/PBHP 552(1) to TBHP-503(2)/ PBHP 552(2)]

1. Physics of devices and Instrumentation
2. Laser Physics

DSE-II [TBHP-504(1) to TBHP-504(2)]

1. Advanced Mathematical Physics
2. Classical Mechanics

DSE-III [TBHP-603(1) to TBHP-603(2)]

1. Nuclear and Particle Physics
2. Atmospheric Physics

DSE-IV

1. Dissertation [PBHD-652]
 2. Optoelectronics [TBHO-604/ PBHO-653]
 3. Nano Materials and Applications [TBHN-604/ PBHN-654]
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**Generic Elective Papers (GE) (Minor-Physics) for other Departments/Disciplines:
(Credit: 06 each)**

1. Mechanics (4) + Lab (4)
 2. Mathematical Physics -I (**5+1**)
 3. Waves and Optics (4) + Lab (4)
 4. Electricity and Magnetism (4) + Lab (4)
 5. Mathematical Physics- II (**5+1**)
 6. Thermal Physics (4) + Lab (4)
 7. Analog Systems & Applications (4) + Lab (4)
 8. Solid State Physics (4) + Lab (4)
 9. Elements of Modern Physics (4) + Lab (4)
 10. Statistical Mechanics (**5+1**)
 11. Laser Physics (4) + Lab (4)
 12. Renewable Energy And Energy Harvesting (4) + Lab (0)
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1. Evaluation Scheme for Practical:

Practical Performance & Viva During The Semester (10 Marks)		Attendance (5 Marks)	Viva (10 Marks)	Total Internal (25 Marks)
Experiment (5 Marks)	File work (5 Marks)			

External Evaluation (25 marks)

Experiment (10 Marks)	File Work (5 Marks)	Viva (10 Marks)	Total External (25 Marks)
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2. Evaluation Scheme for Dissertation:

Dissertation Performance & Presentation During The Semester (40 Marks)	Attendance (10 Marks)	Total Internal (50 Marks)
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External Evaluation (100 marks)

Thesis Evaluation (25 Marks)	Papers presented/Published in conferences/Journals (25 Marks)	Presentation & Viva (50 Marks)	Total External (100 Marks)
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