ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH

Techno Campus, Mahalaxmi Vihar, Ghatikia, Bhubaneswar-751029.

Syllabus Structure (Effective from 2023-24)

School/ Department: School of Basic Sciences & Humanities
Course: M. Sc., Programme: Physics, Duration: 2 years (Four Semesters)

Abbreviation used:

PC:	Professional Core	IA*:	Internal Assessment	L:	Lecture
PE:	Professional Elective	EA:	End-Semester Assessment	T:	Tutorial
OE:	Open Elective	PA:	Practical Assessment	P:	Practical
MC:	Mandatory Course	PR:	Project/ Seminar/ Practical		
LC:	Lab Course	AC:	Audit course		
*Internal Assessment Mark (30 marks) consists of (i) Mid Semester (20 marks), (ii) Quiz/ Assignment (10 marks)					

Subject Code Format:

A	A	B	C	C	C
School/ Dept. (Offering)		**Level**	**Serial Number**		
BH: Basic Sciences and Humanities		**1:** UG/ Int. Msc. (1st Year)			
CS: Computer Sciences		**2:** UG/ Int. Msc. (2nd Year)			
EE: Electrical Sciences		**3:** UG/ Int. Msc. (3rd Year)			
EI: Electronic Sciences		**4:** UG/ Int. Msc. (4th Year)	**001 to 999**		
IP: Infrastructure and Planning		**5:** UG/ Int. Msc. (5th Year)			
ME: Mechanical Sciences		**6:** PG (1st Year)			
BT: Biotechnology		**7:** PG (2nd Year)			
TE: Textile Engineering		**8:** Ph.D.			

1st SEMESTER

Subject Type	Subject Code	Subject Name	Teaching Hours			Credit	Maximum Marks			
			L	T	P		IA	EA	PA	Total
PC-1	BH6161	CLASSICAL MECHANICS	4	0	0	4	30	70	-	100
PC-2	BH6163	MATHEMATICAL METHODS IN PHYSICS	4	0	0	4	30	70	-	100
PC-3	BH6165	QUANTUM MECHANICS-I	4	0	0	4	30	70	-	100
PC-4	BH6167	ELECTRODYNAMICS	4	0	0	4	30	70	-	100
PC Lab-1	BH6561	GENERAL PHYSICS LABORATORY	0	0	3	1.5	-	-	100	100
SEC-1		FUNDAMENTALS OF COMPUTER AND PROGRAMMING IN C	0	0	3	2	30	70	-	100
SEC Lab-1		PROGRAMMING IN C LABORATORY	0	0	3	1.5	-	-	100	100
		Total credit=	**16**	**0**	**9**	**21**	**150**	**350**	**200**	**700**

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2nd Semester

Subject Type	Subject Code	Subject Name	Teaching Hours			Credit	Maximum Marks			
			L	T	P		IA	EA	PA	Total
PC-5	BH6162	STATISTICAL MECHANICS	3	0	0	3	30	70	-	100
PC-6	BH6164	PHYSICS OF SEMICONDUCTOR DEVICES	4	0	0	4	30	70	-	100
PC-7	BH6166	QUANTUM MECHANICS-II	4	0	0	4	30	70	-	100
PC-8	BH6168	EXPERIMENTAL TECHNIQUES	4	0	0	3	30	70	-	100
PC-9	BH6170	ELECTRONICS	3	0	0	3	30	70	-	100
PC Lab-2	BH6562	ELECTROMAGNETIC AND OPTICS LABORATORY	0	0	3	1.5	-	-	100	100
PC Lab-3	BH6564	BASIC ELECTRONICS LABORATORY	0	0	3	1.5	-	-	100	100
		Total credit=	**18**	**0**	**6**	**20**	**150**	**350**	**200**	**700**

3rd Semester

Subject Type	Subject Code	Subject Name	Teaching Hours			Credit	Maximum Marks			
			L	T	P		IA	EA	PA	Total
PC-10	BH7161	ADVANCED QUANTUM MECHANICS AND QUANTUM FIELD THEORY	4	0	0	4	30	70	-	100
PC-11	BH7163	NUCLEAR AND PARTICLE PHYSICS	4	0	0	4	30	70	-	100
PC-12	BH7165	BASIC CONDENSED MATTER PHYSICS	4	0	0	4	30	70	-	100
PC-13	BH7167	NANO SCIENCE AND TECHNOLOGY	3	0	0	3	30	70	-	100
SEMINAR	BH7761	LITERATURE REVIEW AND SEMINAR	0	0	4	2	-	-	100	100
PC Lab-4	BH7561	ADVANCED ELECTRONICS LABORATORY	0	0	3	1.5	-	-	100	100
PC Lab-5	BH7563	BASIC CONDENSED MATTER PHYSICS LABORATORY	0	0	3	1.5	-	-	100	100
		Total credit=	**15**	**0**	**10**	**20**	**120**	**280**	**300**	**700**

4th Semester

Subject Type	Subject Code	Subject Name	Teaching Hours			Credit	Maximum Marks			
			L	T	P		IA	EA	PA	Total
PC-14	BH7162	ATOMIC AND MOLECULAR PHYSICS	3	0	0	3	30	70	-	100
PE-1	BH7262 / BH7264	ADVANCED CONDENSED MATTER PHYSICS / ADVANCED PARTICLE PHYSICS	4	0	0	4	30	70	-	100
PE-2	BH7266 / BH7268 / BH7270	ADVANCED CHARACTERIZATION TECHNIQUES / VACUUM SCIENCE AND TECHNOLOGY / MATERIAL SCIENCE	3	0	0	3	30	70	-	100
PROJECT	BH7662	PROJECT	0	0	6	6	-	-	100	100
PC Lab-6	BH7562	MODERN PHYSICS LABORATORY	0	0	3	1.5	-	-	100	100
PE Lab-1	BH7564 / BH7566	ADVANCED CONDENSED MATTER PHYSICS LABORATORY / ADVANCED PARTICLE PHYSICS LABORATORY	0	0	3	1.5	-	-	100	100
		Total credit=	**10**	**0**	**12**	**19**	**90**	**210**	**300**	**600**

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Credits and Maximum Marks

Semester	Max. Credits	Max. Marks
1st	21	700
2nd	20	700
3rd	20	700
4th	19	600
Total	**80**	**2700**