TECHNO INDIA UNIVERSITY
WESTBENGAL

Syllabus of B.Sc. Physics (NEP)
Course Curriculum for All Semester
(4-years UG Degree Course)

Department of Physics

Techno India University,West Bengal

EM-4, EM Block,Sector V,Bidhannagar, Kolkata -700091, West Bengal

B.Sc. in Physics
Course Curriculum for All Semester

Semester I

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T11101	Mathematical Physics - I	3	1	0	4
TIU-UCH-MI-T11101	Chemistry - I	3	0	0	3
TIU-UPH-SEC-T1101	Electronic Circuit and Applications	3	0	0	3
TIU-UCS-MD-T11101	Fundamentals of Computer Applications	2	1	0	3
TIU-UEN-AEC-S1101	Communicative English – I	2	0	0	2
TIU-UPH-CVA-T1101	Environmental Science	2	0	0	2
TIU-UPH-MJ-L11101	Physics Major Practical	0	0	4	2
TIU-UCH-MI-L11101	Chemistry - ILab	0	0	2	1
				Total	20

Semester II

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T12101	Classical Mechanics	4	1	0	4
TIU-UCH-MI-T12101	Chemistry – II	3	0	0	3
TIU-UPH-SEC-T1201	Basics of Programming and Scientific Word Processing	3	0	0	3
TIU-UPH-MD-T1202	Introduction to Data Science	2	1	0	3
TIU-UEN-AEC-S1201	Communicative English – II	2	0	0	2
TIU-UPH-CVA-T1201	Research Methodologies / Laboratory Safety and Quality Control	2	0	0	2
TIU-UPH-MJ-L12101	Physics Major Practical	0	0	4	2
TIU-UCH-MI-L12101	Chemistry Lab	0	0	2	1
				Total	20

Semester III

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T21201	Electricity and Magnetism	3	1	0	4
TIU-UPH-MJ-T21202	Waves and Optics	3	1	0	4
TIU-UMA-MI-T21101	Linear and Abstract Algebra	4	0	0	4
TIU-UPH-SEC-T1201	Scientific Computing using Python	3	0	0	3
TIU-UPH-MD-S2101	Physics for Sustainable Development	3	0	0	3
TIU-UEN-AEC-T2101	Heritage of Modern Indian Languages -I	2	0	0	2
TIU-UPH-MJ-L21101	Physics Major Practical	0	0	4	2
				Total	22

Semester IV

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T22201	Mathematical Physics II	3	1	0	4
TIU-UPH-MJ-T22202	Thermal Physics	3	1	0	4
TIU-UPH-MJ-T22203	Analog Electronics	3	1	0	4
TIU-UMA-MI-T21201	Probability and Statistics	3	1	0	4
TIU-UEN-AEC-T2201	Heritage of Modern Indian Languages -II	2	0	0	2
TIU-UPH-CVA-T2201	Intellectual Property Rights	2	0	0	2
TIU-UPH-MJ-L21201	Physics Major Practical	0	0	4	2
				Total	22

Semester V

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T31301	Quantum Mechanics I	3	1	0	4
TIU-UPH-MJ-T31302	Modern Physics	3	1	0	4
TIU-UPH-MJ-T31303	Digital Electronics	2	1	0	3
TIU-UMA-MI-T31101	Discrete Mathematics	3	1	0	4
TIU-UPH-MJ-L31303	Digital Electronics Lab	0	0	2	1
TIU-UPH-SEC-P31301	Internship	0	0	8	4
				Total	20

Semester VI

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T32301	Electromagnetic Theory	3	1	0	4
TIU-UPH-MJ-T32302	Quantum Mechanics II	3	1	0	4
TIU-UPH-MJ-T32303	Atomic and Molecular Physics	3	1	0	4
TIU-UPH-MJ-T32304	Nuclear Physics	3	1	0	4
TIU-UMA-MI-T32101	Numerical Analysis	3	1	0	4
				Total	20

Semester VII (Without Research)

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T41401	Statistical Mechanics	3	1	0	4
TIU-UPH-MJ-T41402	Solid State Physics	3	1	0	4
TIU-UPH-MJ-T41403	Introduction to Material Characterization	3	1	0	4
TIU-UEC-MI-T41101	Robotics and Automation	3	1	0	4
TIU-UPH-MJ-T41404	Communication Electronics	3	1	0	4
				Total	20

Semester VII (With Research)

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T41401	Statistical Mechanics	3	1	0	4
TIU-UPH-MJ-T41402	Solid State Physics	3	1	0	4
TIU-UPH-MJ-T41403	Introduction to Material Characterization	3	1	0	4
TIU-UEC-MI-T41101	Robotics and Automation	3	1	0	4
TIU-UPH-SEC-P41101	Research I	0	0	8	4
				Total	20

Semester VIII(Without Research)

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T42401	Applied Physics and Emerging Technologies	3	1	0	4
TIU-UPH-MJ-T42402	Semiconductor Physics and Devices	3	1	0	4
TIU-UPH-MJ-T42403	Material Science	3	1	0	4
TIU-UPH-MJ-T42404	Renewable Energy	3	1	0	4
TIU-UPH-MI-T42201	Fundamentals of AI and ML	3	1	0	4
				Total	20

Semester VIII(With Research)

Code	Name of the subject	Contact Hrs. / Week			Credit
		L	T	P	
Theory					
TIU-UPH-MJ-T42401	Applied Physics and Emerging Technologies	3	1	0	4
TIU-UPH-MJ-T42402	Semiconductor Physics and Devices	3	1	0	4
TIU-UCS-MI-T42201	Fundamentals of AI and ML	3	1	0	4
TIU-UPH-SEC-P42201	Research II	0	0	16	8
				Total	20