

1	IV	IC	IC201P	Design Practicum	0	0	6	3				
2	IV	DC	EP403	Physics of Atoms and Molecules	3	0	0	3	3-0-0-3			
3	IV	DC	PH501	Solid State Physics	3	0	0	3	3-0-0-3			
4	IV	DC	EPXXX	Reverse Engineering	0	0	2	1	0-0-2-1			
5	IV	HSS	HSXXX	HSS Course					3-0-0-3			
6	IV	DC	PH302	Introduction to Statistical Mechanics	3	0	0	3	3-0-0-3			
	IV	DE		Discipline Elective				3	3-0-0-3			
	IV	DE		Discipline Elective				3				
	IV											
				Fifth Semester							22	87
1	V	DC	EE....	Device Electronics	3	0	0	3	3-0-0-3	This course is same as EE 311. It is under revision by SCEE and will be floated with a new course number.		
2	V	DC	EP302	Computational Methods for engineering	3	0	0	3	3-0-0-3			
3	V	DC	EP402P	Engineering Physics Practicum	1	0	5	4	1-0-5-4			
5	V	DE		Discipline Elective				3				
6	V	DE		Discipline Elective				3				
		FE		Free Elective				3				
		HSS	HSXXX	HSS Course				3				
											22	109
				Sixth Semester								
1	VI	DC	EP401P	Engineering of Instrumentation	1	0	5	4	1-0-5-4			
2	VI	DC	PH502	Photonics	3	0	0	3	3-0-0-3			
4	VI	DE		Discipline Elective				3				
5	VI	DE		Discipline Elective				3				
6	VI	DE		Discipline Elective				3				
	VI	FE		Free Elective				3				
		ISTP	ISTP	ISTP/Alternatives				4		All core courses need to be completed by 6th semester. If the discipline core courses are completed by 5th semesters, the students may go for semester internship, without much issues of completing the core courses. ISTP and Internship are added to make 18 in Seventh Semester.	19	128
				Seventh Semester								
1	VI/VII	IC	IC010	Internship				2		Internship needs to be completed before start of 8th semester. The grades for the internship may be added to 8th semester grades.	18	146
1	VII	DE	DE-7	Discipline Elective				3				
2	VII	FE		Free Elective				3				
4	VII	FE		Free Elective				3				
6				MTP-1				3				
				Eighth Semester								
1	VIII	DE		Discipline Elective				3				
2	VIII	FE		Free Elective				3				
3	VIII	FE		Free Elective				3				
5	VIII	MTP 2		MTP-2				5			14	160
										If 3 credits HSS is done in Sem I then only one 3 credits needs to be done in either Se V or Sem VI. Hence the total HSS credits would be 12 and Overall Credits would be 160.		

List of Discipline Electives								
Sl. No	Course Code	Course Name	L	T	P	Cr	L-T-P-C	Remarks
1	PH503	Laser and Applications	3	0	0	3	3-0-0-3	
2	PH504	Organic Optoelectronics	3	0	0	3	3-0-0-3	
3	PH507	X-ray as a probe to study the material pro	3	0	0	3	3-0-0-3	
4	PH508	Magnetism and Magnetic Materials	3	0	0	3	3-0-0-3	
5	PH601	Mesoscopic Physics and Quantum Transp	3	0	0	3	3-0-0-3	
6	PH603	Advanced Condensed Matter Physics	3	0	0	3	3-0-0-3	
7	PH612	Nuclear and Particle Physics	3	0	0	3	3-0-0-3	
8	PH613	Special Topics in Quantum Mechanics	3	0	0	3	3-0-0-3	
9	PH605	Superconductivity	3	0	0	3	3-0-0-3	
10	PH606	Quantum Field Theory	3	0	0	3	3-0-0-3	
11	PH604	Optical Properties of Solids	3	0	0	3	3-0-0-3	
12	PH528	Introduction to General Relativity	3	0	0	3	3-0-0-3	
13	PH607	Physics of Ultra cold Quantum Gases	3	0	0	3	3-0-0-3	
14	PH521	Electromagnetic Theory	4	0	0	4	4-0-0-4	
15	PH608	Computer Assisted quantum mechanics	3	0	0	3	3-0-0-3	
16	PH609	Theory of quantum collision and spectros	3	0	0	3	3-0-0-3	
17	MA513	Ordinary Differential Equations	3	1	0	4	3-1-0-4	
18	MA522	Partial Differential Equations	3	1	0	4	3-1-0-4	
19	MA511	Real Analysis	3	1	0	4	3-1-0-4	
20	MA521	Functional Analysis	3	1	0	4	3-1-0-4	
21	MA512	Linear Algebra	3	1	0	4	3-1-0-4	
22	EE614	Optical communication systems	3	0	0	3	3-0-0-3	
23	EE611	VLSI Technology	3	0	0	3	3-0-0-3	
24	EE520	Microelectronics Devices and Modelling	3	0	0	3	3-0-0-3	
25	EE307	Theory of Measurement	3	0	0	3	3-0-0-3	
26	EE621	Radiating Systems	3	0	0	3	3-0-0-3	
27	EE551	Applied Photonics for Scientists and Engi	2	1	0	3	2-1-0-3	
28	CS241	Introduction to Cryptography	3	0	0	3	3-0-0-3	has not been offered for a long time
29	CS208	Mathematical Foundations of Computer S	3	0	0	3	3-0-0-3	
30	CS202	Data Structures and Algorithms	3	0	0	3	3-0-0-3	
31	CS403	Algorithm Design and Analysis	3	0	0	3	3-0-0-3	
32	ME307	Energy Conversion Devices	3	0	0	3	3-0-0-3	
33	ME615	Applied Computational Fluid Dynamics	3	0	0	3	3-0-0-3	
34	ME210	Fluid Mechanics	3	0	0	3	3-0-0-3	
35	ME509	Nano Manufacturing	3	0	0	3	3-0-0-3	
36	ME603	Advanced Fluid Mechanics	3	0	0	3	3-0-0-3	
37	PH701	Introduction to molecular simulations	2	0	4	4	2-0-4-4	
38	PH706	Introduction to stochastic problems in phy	3	0	0	3	3-0-0-3	
39	PH621	Computational Methods for Physicists	2	0	4	4	2-0-4-4	
40	EP502	Informatics for Material Design	2	0	2	3	2-0-2-3	we have to check if this has been approved by the BoA
41	MA516	Topology	3	1	0	4	3-1-0-4	New additions based on students' suggestions
42	EN502	Emerging energy sources	3	0	0	3	3-0-0-3	
43	DS201	Data Handling and Visualization	2	0	2	3	2-0-2-3	
44	DS404	Information Security and Privacy	3	0	0	3	3-0-0-3	In place of Introduction to Cryptography
45	CS309	Information and Database Systems	3	0	2	4	3-0-2-4	
46	CS671	Deep Learning and Applications	3	1	0	4	3-1-0-4	
47	CS672	Advanced Topics in Deep Learning	3	0	2	4	3-0-2-4	
48	EE203	Network theory	3	0	0	3	3-0-0-3	
49	EE512	CMOS Analog IC Design	3	0	2	4	3-0-2-4	
50	DS301	Mathematical Foundations of Data Scienc	3	0	1	4	3-1-0-4	
51	DS403	Introduction to Statistical Learning	2	0	2	3	2-0-2-3	
52	CS511	Introduction to Probability	2	0	0	2	2-0-0-2	
53	ME503	Heat Transfer				3		
54	MA560	Nonlinear Dynamics and Chaos	3	0	0	3	3-0-0-3	
55	ME210	Fluid Mechanics	2.5	0.5	0	3	2.5-0.5-0-3	
56	DS401	Optimization for Data Science	3	0	0	3	3-0-0-3	
57	CS304	Formal Language and Automata Theory	3	0	0	3	3-0-0-3	
58	EE211	Analog Circuit Design	2	0	2	3	2-0-2-3	
59	EE511	Computer Vision	3	0	2	4	3-0-2-4	
60	EE519P	CMOS Digital IC Design Practicum	1	0	2	2	1-0-2-2	
61	EE524	Digital MOS LSI Circuits	3	0	0	3	3-0-0-3	
62	EE534	Probability and Random Processes	3	0	0	3	3-0-0-3	
63	EE593	Low power VLSI Design	3	0	0	3	3-0-0-3	
NOTE:								
This Discipline Electives list will be maintained by Academics Office. Elective courses are not allowed to delete. The addition of courses is permitted. This list may be modified during the time of next curriculum revision. UG students may preferably be allowed to take upto 5 level courses as Discipline Courses. 6 level courses may be offered as free electives.								

SUMMARY

Semester	DC	DE	DC + DE
III	10	3	16
IV	10	6	13
V	10	6	16
VI	7	9	16
VII	0	3	3
VIII	0	3	3
Total	37	30	67

Symbol	Course Type	Credits	
DC	Discipline core	37	
DE	Discipline elective	30	
FE	Free elective	21	
HSS	Humanities and Social Science Course	12	
IC	Institute Core	45	Including the baskets
IKS	Indian knowledge system	3	
ISTP	Interactive Socio-Technical Practicum	4	
MTP 1	Major Technical project 1	3	
MTP 2	Major Technical project 2	5	
		160	

Double major Courses

Sl. No.	Type	Course Code	Course Name	L	T	P	C	L - T - P - C
1	DC	PH301	Quantum Mechanics and Application	3	0	0	3	3-0-0-3
2	DC	EP301	Engineering Mathematics-2	3	1	0	4	3-1-0-4
3	DC	EP321	Foundations of Electrodynamics	3	0	0	3	3-0-0-3
4	DC	PH302	Introduction to Statistical Mechanics	3	0	0	3	3-0-0-3
5	DC	EP403	Physics of Atoms and Molecules	3	0	0	3	3-0-0-3
6	DC	PH501	Solid State Physics	3	0	0	3	3-0-0-3
7	DC	EP402P	Engineering Physics Practicum	1	0	5	4	1-0-5-4
8	DC	PH502	Photonics	3	0	0	3	3-0-0-3
9	IC	IC121	Mechanics of Particles and Waves	3	0	0	3	3-0-0-3
10	DE		Discipline Elective				3	
11	DE		Discipline Elective				3	
12	DE		Discipline Elective				3	
							38	