DEPARTMENT OF POLYMER & PROCESS ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **41** **M.Tech. (Polymer Science and Engineering)**
Department: **PPE Department of Polymer and Process Engineering**
Year: **I**

	Teaching Scheme				Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
Semester- I (Autumn)														
1.	PEN-501	Polymeric Materials & their Properties	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
2.	PEN-503	Macromolecular Chemistry	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
3.	PEN-505	Advanced Polymer Characterization	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
4.	ELE-1	Program Elective-1	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	ELE-2	Program Elective-2	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
		Total		19										
Semester-II (Spring)														
1.	PEN-502	Polymer Rheology and Physics	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
2	PEN-504	Elastomer Technology and Processing	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
3.	ELE-3	Program Elective-3	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
4.	ELE-4	Program Elective-4	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
5.	ELE-5	Program Elective-5	PEC	3	3	0	2/2	3	-	15-30	20	15-25	30-40	-
	PEN-701	Seminar	SEM	2	0	0	2	-	-	-	-	-	100	-
		Total		19										

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Program Code: **41** **M.Tech. (Polymer Science and Engineering)**
Department: **PE** **Department of Polymer and Process Engineering**
Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
Semester- I (Autumn)														
1.	PEN-701A	Dissertation Stage–I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor if required.														
Semester-II (Spring)														
1.	PEN-701B	Dissertation Stage–II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	**19**	**19**	**12**	**18**
Total Credits	**68**			

Program Elective Courses M.Tech. (Polymer Science and Engineering)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Program Elective-1 Autumn Semester														
1.	PEN-507	Advanced Engineering Mathematics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
2.	PEN-509	Statistical Analysis	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	PEN-511	Process Equipment Design	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
4.	PEN-513	Advanced Optimization Techniques	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	PEN-515	Polymer Blends and Composites	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
Program Elective-2 Autumn Semester														
6.	PEN-517	Polymer Colloids	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
7.	PEN-519	Product Standardizations and Regulatory Standards in Polymers	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
8.	PEN-521	Molecular Modelling and Simulation	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
9.	PEN-523	Computer Aided Polymer Product Design	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
Program Elective-3 Spring Semester														
10.	PEN-506	Bio and Bio-medical Polymers	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
11.	PEN-508	Heat and Mass Transfer in Polymeric Materials	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
12.	PEN-510	Quality Management	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
13.	PEN-512	Functional Polymer	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
Program Elective-4 Spring Semester														
14.	PEN-514	High Performance and Conducting Polymers	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
15.	PEN-516	Polymer Film & Fibre Technology	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
16.	PEN-518	Polymer Degradation & Recycling	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
17.	PEN-520	Advanced Polymeric Technology	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-

Program Elective-5 Spring Semester														
18.	PEN-522	Polymer Processing	PEC	3	3	0	2/2	3	-	15-30	20	15-25	30-40	-
19.	PEN-524	Polymer Reaction Engineering	PEC	3	3	0	2/2	3	-	15-30	20	15-25	30-40	-
20.	PEN-526	Advanced Process Control	PEC	3	3	0	2/2	3	-	15-30	20	15-25	30-40	-
21.	PEN-528	Polymeric Membrane Technology	PEC	3	3	0	2/2	3	-	15-30	20	15-25	30-40	-