DEPARTMENT OF POLYMER AND PROCESS ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Polymer Science and Engineering)**
Department : **Department of Polymer and Process Engineering**
Year : **I**
Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	PEC-501	Polymeric Materials & Their Properties	PCC	2	2	0	0	2	0
2.	PEC-503	Polymer Rheology and Physics	PCC	3	3	0	0	3	0
3.	PEC-505	Macromolecular Chemistry	PCC	3	3	0	0	3	0
4.	PEC-507	Elastomer Technology and Processing	PCC	2	2	0	0	2	0
5.	PEC-509	Advanced Polymer Characterization	PCC	3	3	0	0	3	0
6.	PEC-511	Polymer Synthesis, Processing and Characterization Lab	PCC	3	0	0	6	0	3
7.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	3	-	-	-	-	-
2.		Program Elective-II	PEC	3	-	-	-	-	-
3.		Program Elective-III	PEC	3	-	-	-	-	-
4.		Program Elective-IV	PEC	3	-	-	-	-	-
5.		Program Elective-V	PEC	3	-	-	-	-	-
6.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
7.	PEC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**20**					

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Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	PEC-691	Internship Social Activity	ISA	4	-	-	-	-	-
2.	PEC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**14**					
Semester-II (Spring)									
1.	PEC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		**14**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	18	20	14	14
Total Credits	**66**			

M.Tech. (Polymer Science and Engineering)

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	PEL-501	Advanced Engineering Mathematics	PEC	3	3	0	0	3	0
2.	PEL-502	Applied Numerical Methods and AI	PEC	3	3	0	0	3	0
3.	PEL-503	Process Equipment Design	PEC	3	3	0	0	3	0
4.	PEL-504	Advanced Optimization Techniques	PEC	3	3	0	0	3	0
5.	PEL-505	Polymer Blends and Composites	PEC	3	3	0	0	3	0
6.	PEL-506	Polymer Colloids	PEC	3	3	0	0	3	0
7.	PEL-507	Product Standardizations and Regulatory Standards in Polymers	PEC	3	3	0	0	3	0
8.	PEL-508	Applied Molecular Modelling and Simulation	PEC	3	3	0	0	3	0
9.	PEL-509	Computer Aided Polymer Product Design	PEC	3	3	0	0	3	0
10.	PEL-510	Bio and Bio-medical Polymers	PEC	3	3	0	0	3	0
11.	PEL-511	Heat and Mass Transfer in Polymeric Materials	PEC	3	3	0	0	3	0
12.	PEL-512	Quality Management	PEC	3	3	0	0	3	0
13.	PEL-513	Functional Polymers and Semiconductors	PEC	3	3	0	0	3	0
14.	PEL-514	High Performance and Conducting Polymers	PEC	3	3	0	0	3	0
15.	PEL-515	Polymer Film & Fibre Technology	PEC	3	3	0	0	3	0
16.	PEL-516	Polymer Degradation & Recycling	PEC	3	3	0	0	3	0
17.	PEL-517	Paint and Coating Technology	PEC	3	3	0	0	3	0
18.	PEL-518	Polymer Processing	PEC	3	3	0	0	3	0
19.	PEL-519	Polymer Reaction Engineering	PEC	3	3	0	0	3	0
20.	PEL-520	Advanced Process Control	PEC	3	3	0	0	3	0
21.	PEL-521	Polymeric Membrane Technology	PEC	3	3	0	0	3	0
22.	PEL-522	Molecular Engineering	PEC	3	3	0	0	3	0
23.	PEL-523	Polymers for Energy Generation and Storage	PEC	3	3	0	0	3	0

M.Tech. (Polymer Science and Engineering)

Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	PET-501	Polymers for Advanced Applications	STAR	3	3	0	0	3	0
2.	PET-502	Membrane Fabrication & Applications	STAR	3	3	0	0	3	0

Social Sciences Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	PES-501	Polymers for Society and Sustainability	SSC	2	2	0	0	2	0