हरकोर्ट बटलर प्राविधिक विश्वविद्यालय
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Department: Plastic Technology

School: School of Chemical Technology

Name of Programme: B. Tech.

Academic Session 2021-22

Total no. of courses in the Programme: 60

% Change in the course curriculum : 12/60=20%

No. of courses where syllabus revision was carried out BoS		
S. No.	**Name of course**	**Course code**
1	Polymer Chemistry	TPL 201
2	Polymerization Engineering I	TPL 202
3	Polymer Processing I	TPL 301
4	Rheology and Testing of Polymers	TPL 303
5	Polymer Processing II	TPL 302
6	Structure & Property of Polymers	TPL 304
7	Polymerization Engineering II	TPL 306
8	Technology Of Elastomers	TPL 401
9	Advanced Polymeric Materials	TPL 403
10	Programme Elective Course II (Polymer Ahesives and Foams)	TPL 409
11	*Programme Elective Course III (Plastic Packaging & Waste Management)	TPL 402
12	PEC I (Polymer Blends & Alloys)	TPL 455

Number of Courses related with employability/ entrepreneurship/ skill development

Courses related with employability/ entrepreneurship/ skill development		
S. No.	**Name of course**	**Course code**
1	Polymer Chemistry	TPL 251
2	Polymer Chemistry Lab	TPL 253
3	Fluid Mechanics and Mechanical operation	TPL 255
4	Materials & Energy Balance	TPL 257
5	Polymerization Engineering I	TPL 252
6	Heat Transfer Operations	TPL 254
7	Chemical Engineering Thermodynamics	TPL 256

8	Polymer Processing I	TPL 351
9	Rheology and Testing of Polymers	TPL 353
10	Polymer Testing Lab	TPL 355
11	Mass Transfer Operations	TPL 357
12	Chemical Reaction Engineering	TPL 359
13	Polymer Processing II	TPL 352
14	Structure & Property of Polymers	TPL 354
15	Polymerization Engineering II	TPL 356
16	Plastic Product and Mold Design	TPL 358
17	Polymer Composite	TPL 360
18	Instrumentation & Process Control	TPL 362
19	Technology Of Elastomers	TPL 451
20	Advanced Polymeric Materials	TPL 453
21	Industrial Training	TPL 493
22	Seminar	TPL 495
23	Project	TPL 497

Elective courses in the programme

S. No.	Program Elective Courses	Name of Course	Course code
1	PEC I	Polymer Blends & Alloys Polymer Product Technology	TPL 455 TPL 457
2	PEC II	Polymeric Adhesives & Foams Polymer Nanocomposites	TPL 459 TPL 461
3	PEC III	Plastic Packaging & Waste Management Polymer Coating Technology	TPL 452 TPL 454
4	PEC IV	Process Modeling & Simulation Computer Aided Equipment Design	TPL 456 TPL 458

New courses introduced		
S. No.	Name of course	Course code
1	Polymer Product Technology	TPL 457
2	Polymer Nanocomposites	TPL 461
3	Polymer Blends and Alloys	TPL 455
4	Polymer Chemistry Lab	TPL 253
5	Polymer Testing Lab	TPL 355

Signature and Seal

Head of Department

Dr. Indira Nigam
Professor & Head
Dept. of Plastic Technology
H.B. Technical University, Kanpur

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME

B. TECH. CHEMICAL TECHNOLOGY- PLASTIC TECHNOLOGY

Semester-I

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab.	Total		
1	BSC	Engineering Chemistry	BCY 151	4	3	0	2	15	20	15	50	50	100
2	BSC	Mathematics I	BMA 151	4	3	1	0	30	20	-	50	50	100
3	ESC	Electronics & Instrumentation Engineering	EET 151	3	3	0	0	30	20	-	50	50	100
4	ESC	Engineering Graphics	ECE 151	3	0	0	6	30	20	-	50	50	100
5	ESC	Computer Concepts & Programming	ECS 151	4	3	0	2	15	20	15	50	50	100
6	ESC	Workshop Practice	EWS 151	2	0	0	4	--	20	30	50	50	100
7	MC (Non Credit)	Environment & Ecology	ECE 153	0	2	0	0	30	20	-	50	50	100*
		Total Credits 20											**600**

*** 100 Marks will not be added as the course in non-Credit.**

Semester-II

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	BSC	Physics	BPH 152	4	3	0	2	15	20	15	50	50	100
2	BSC	Mathematics II	BMA 152	4	3	1	0	30	20	-	50	50	100
3	ESC	Electrical Engineering	EEE 152	4	3	0	2	15	20	15	50	50	100
4	ESC	Engineering Mechanics	EME 152	3	3	0	0	30	20	-	50	50	100
5	HSMC	English Language & Composition	HHS 152	2	2	0	0	30	20	-	50	50	100
6	HSMC	Professional Communication	HHS 154	3	2	0	2	15	20	15	50	50	100
		Total Credits 20											**600**

Semester-III

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	BSC	Mathematics III	BMA 251	4	3	1	0	30	20	-	50	50	100
2	PCC	Polymer Chemistry	TPL 251	4	3	1	0	30	20	-	50	50	100
3	PCC	Polymer Chemistry Lab	TPL 253	2	0	0	4	-	20	30	50	50	100
4	ESC	Fluid Mechanics and Mechanical operation	TPL 255	5	3	1	2	15	20	15	50	50	100
5	PCC	Materials & Energy Balance	TPL 257	4	3	1	0	30	20	-	50	50	100
	HSMC	Organizational Behaviour	HHS 253	3	3	0	0	30	20	-	50	50	100
7	MC (Non Credit)	Cyber Security	ECS 255	0	2	0	0	30	20	-	50	50	100*
	Total Credits 22												**600**

Semester IV

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	BSC	Modern Analytical Techniques	BCY 252	4	3	0	2	15	20	15	50	50	100
2	ESC	Computer Oriented Numerical Methods	BMA 252	4	2	1	2	15	20	15	50	50	100
3	PCC	Polymerization Engineering I	TPL 252	5	3	1	2	15	20	15	50	50	100
4	PCC	Heat Transfer Operations	TPL 254	3	2	1	0	30	20	-	50	50	100
5	PCC	Chemical Engineering Thermodynamics	TPL 256	3	2	1	0	30	20	-	50	50	100
6	HSMC	Engg Economics & Management	HHS 252	3	3	0	0	30	20	-	50	50	100
7	MC (Non Credit)	Indian Constitution	HHS 256	0	2	0	0	30	20	-	50	50	100*
	Total Credits 22												**600**

Semester-V

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	PCC	Polymer Processing I	TPL 351	5	3	1	2	15	20	15	50	50	100
2	PCC	Rheology and Testing of Polymers	TPL 353	4	3	1	0	30	20	-	50	50	100
3	PCC	Polymer Testing Lab	TPL 355	2	0	0	4	-	20	30	50	50	100
4	PCC	Mass Transfer Operations	TPL 357	4	3	1	0	30	20	-	50	50	100
5	PCC	Chemical Reaction Engineering	TPL 359	4	3	1	0	30	20	-	50	50	100
6	OEC (Humanities)	Open Elective Course -I	HHS 341	3	3	0	0	30	20	-	50	50	100
	Total Credits				**22**								**600**

Semester-VI

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab.	Total		
1	PCC	Polymer Processing II	TPL 352	3	2	0	2	15	20	15	50	50	100
2	PCC	Structure & Property of Polymers	TPL 354	3	2	1	0	30	20	-	50	50	100
3	PCC	Polymerization Engineering II	TPL 356	4	3	0	2	15	20	15	50	50	100
4	PCC	Plastic Product and Mold Design	TPL 358	3	2	1	0	30	20	0	50	50	100
5	PCC	Polymer Composite	TPL 360	3	3	0	0	30	20	0	50	50	100
6	PCC	Instrumentation & Process Control	TPL 362	3	2	1	0	30	20	-	-	50	100
7	OEC (Maths)	Open Elective Course -II	BMA 342	3	3	0	0	30	20	-	50	50	100
		Total Credits			**22**								**700**

Semester-VII

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	ESE	TA	Lab	Total		
1	PCC	Technology Of Elastomers	TPL 451	2	2	0	0	30	20	-	50	50	100
2	PCC	Advanced Polymeric Materials	TPL 453	3	2	0	2	15	20	15	50	50	100
3	PEC	Programme Elective Course I (Polymer Blends & Alloys OR Plastic Product Technology)	TPL 455 OR TPL 457	3	3	0	0	30	20	-	50	50	100
4	PEC	Programme Elective Course II (Polymer Adhesives and Foams OR Polymer Nanocomposite)	TPL 459 OR TPL 461	3	3	0	0	30	20	-	50	50	100
5	OEC (Plastic Tech.)	Open Elective Course -III (Introduction to Polymer Science)	TPL 491	3	3	0	0	30	20	-	50	50	100
6		Industrial Training	TPL 493	2	0	0	4	-	50	-	50	50	100
7		Seminar	TPL 495	2	0	0	4	-	50	-	50	50	100
8		Project	TPL 497	4	0	0	8	-	50	-	50	50	100
	Total Credits 22												**800**

Semester-VIII

Sl. No.	Course Type	Course Title	Subject Code	Credits	Periods			Sessional Marks				ESE	Total Marks
					L	T	P	MSE	TA	Lab	Total		
1	PEC	*Programme Elective Course III (Plastic Packaging & Waste Management OR Polymer Coating Technology)	TPL 452 OR TPL 454	4	3	1	0	30	20	-	50	50	100
2	PEC	*Programme Elective Course IV (Process Modeling & Simulation Or Computer aided Equipment Design)	TPL 456 OR TPL 458	4	3	1	0	30	20	-	50	50	100
3	OEC (Plastic Tech.)	*Open Elective Course –IV (Basics of Polymer Processing)	TPL 492	4	3	1	0	30	20	-	50	50	100
4		Project	TPL 498	10	0	0	20	-	50	-	50	50	100
		Total Credits 22											**400**

*** Online Courses**

List of Programme Elective Courses

S. No.	PEC Names	Subject Name	Subject Code	C (L-T-P)
1.	Programme Elective Course I	Polymer Blends & Alloys	TPL 455	3 (3-0-0)
		Polymer Product Technology	TPL 457	
2.	Programme Elective Course II	Polymeric Adhesives & Foams	TPL 459	3 (3-0-0)
		Polymer Nanocomposites	TPL 461	
3.	Programme Elective Course III	Plastic Packaging & Waste Management	TPL 452	4 (3-1-0)
		Polymer Coating Technology	TPL 454	
4.	Programme Elective Course IV	Process Modeling & Simulation	TPL 456	4 (3-1-0)
		Computer Aided Equipment Design	TPL 458	

List of Open Elective Courses

S. No.	OEC Names	Subject Name	Subject Code	C (L-T-P)
1.	Open Elective Course II (Humanities)	Entrepreneurship Development	HHS 341	3 (3-0-0)
2.	Open Elective Course II (Maths)	Operations Research	BMA 342	3 (3-0-0)
3.	Open Elective Course III (Plastic Technology)	Introduction to Polymer Science	TPL 491	3 (3-0-0)
4.	Open Elective Course IV (Plastic Tech.)	Basics of Polymer Processing	TPL 492	4 (3-1-0)