

DEPARTMENT OF POLYMER SCIENCE
University College of Science
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR-313 009

Syllabus of M.Sc. Polymer Science CBCS Scheme

Semester I

S. No.	Course Code	Title of the Course	L-T-P	No. of Credits	Max. Marks		
					Uni. Exam	Int. Exam	Total
1	M 1 POLY 01-CT 01	Inorganic Chemistry	3-1-0	4	80	20	100
2	M 1 POLY 02-CT 02	Organic Chemistry	3-1-0	4	80	20	100
3	M 1 POLY 03-CT 03	Physical Chemistry	3-1-0	4	80	20	100
4	M 1 POLY 04-CT 04	Spectroscopy in analysis-I	3-1-0	4	80	20	100
5	M 1 POLY 13-CP 13	Practical-A-I	0-0-8	4	80	20	100
6	M 1 POLY 14-CP 14	Practical-B-I	0-0-8	4	80	20	100
Total			12-4-16	24	480	120	600

Semester II

S. No.	Course Code	Title of the Course	L-T-P	No. of Credits	Max. Marks		
					Uni. Exam	Int. Exam	Total
1	M 2 POLY 05-CT 05	Environmental and green chemistry	3-1-0	4	80	20	100
2	M 2 POLY 06-CT 06	Instrumental techniques	3-1-0	4	80	20	100
3	M 2 POLY 07-CT 07	Spectroscopy in analysis-II	3-1-0	4	80	20	100
4	M 2 POLY 08-CT 08	Fundamental of Polymer Chemistry	3-1-0	4	80	20	100
5	M 2 POLY 15-CP 15	Practical-A-II	0-0-8	4	80	20	100
6	M 2 POLY 16-CP 16	Practical-B-II	0-0-8	4	80	20	100
7	M 2 POLY 01-SE 01	Skill Course I	1-0-2	2	40	10	50
Total			13-4-18	26	520	130	650

Discipline Specific Courses Theory and Practicals

Subject code	Title of Course
Rubber Technology Discipline (Group A)	
Theory	
M 3 POLY 19-ET 01	Materials for compounding and Reinforcement
M 3 POLY 20-ET 02	Tyre and rubber processing operations
M 4 POLY 21-ET 03	Rubber Product Technology
M 4 POLY 22-ET 04	Testing and characterization of rubber product
Practicals	
M 3 POLY 23-EP 05	Testing of Latex and identification of rubbers
M 4 POLY 24-EP 06	Mechanical properties and testing of rubber
Plastic Technology Discipline (Group B)	
Theory	
M 3 POLY 25-ET 07	Compounding and uses of Plastics
M 3 POLY 26-ET 08	Plastic Processing technology
M 4 POLY 27-ET 09	Identification and testing of plastics
M 4 POLY 28-ET 10	TextileTechnology
Practicals	
M 3 POLY 29-EP 11	Identification of plastics
M 4 POLY 30-EP 12	Mechanical properties and testing of plastics
Skill Based Courses	
I	Polymer Processing Management
II	Paint Technology

Note: -

1. Skill based courses will be offered on payment basis, which is Rupees 4000 per course with a minimum intake of 10 students in each course.
2. Candidate has to select two papers from any group A/B in the III semester, the selected group will continue in the IV semester. Practical examinations will be conducted by the board of examiners consisting of one internal (to be appointed by the Head of Department) and one external examiner (to be appointed by the University).

SEMESTER-II

M 2 POLY 01-SE 01

Polymer processing management

M.M.80 marks

Credits: 2

Unit- I

Rubber product manufacturing system: The system concept, Prediction, Monitoring and control of process performance, Production organization

Process control and Quality control: The interaction of process control and quality control, Specifications, Process capability studies, Process monitoring, Process control, Quality control.

Unit-II

Plant layout and operation methods: General consideration, transport and storage in manufacture, Handling methods and operations at work stations, Planning and allocating space layout synthesis and evaluation, Installing and commissioning a layout.

Unit-III

Company Philosophy, Organization and Strategy: Philosophy, Company Organization, Market Research and Company Development.

The economics of manufacturing operations: The flow of cash through a company, Cost identification and analysis methods, Standard costs, Business plans and budgets, Budgetary control.

Unit-IV

Production management: Production planning, Purchasing and inventory control, implementing the production plan.

Unit-V

Quality Management Systems: Quality data, Quality audit, Quality costs, Quality policy, Quality objectives, Quality systems, Inspection, Certification and Accreditation. Basic concepts on ISO 9000, QS 9000, ISO 14000, TS 16949, EFQM model and TQM.

Recommended Books:

1. Physical testing of rubbers: R. P. Brown.
2. Rubber Technology and Manufacturing: C.M. Blow.
3. Introduction of Polymer Sc. & Rubber Technology, Vol. I, Ed. By Dr. R. Mukhopadhyay.