

TOTAL	60				

GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL203**

SUBJECT NAME : **POLYMER TECHNOLOGY**

FACULTY NAME : **ARCHANA MISHRA**

DESIGNATION : **LECTURER-PLASTIC TECH**

TOPIC	LECTURE / PRACTICAL CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
Introduction to Polymers :					
History of polymers, Nature of polymers	1	AUGUST	19/08/15		PPT
Classification of polymers - plastics, rubbers and fibres	1	AUGUST	22/08/15		PPT
Thermosets and thermoplastics, their comparison	1	AUGUST	26/08/15		PPT
Hetero, Homo and Copolymer	1	AUGUST	29/08/15		PPT
Reinforced and engineering plastics	1	SEPT	02/09/15		PPT
Classification of linear, branched and cross linked polymer	1	SEPT	05/09/15		PPT
Random alternate blocks and graft copolymers	1	SEPT			
Various natural polymers	1	SEPT			
Types of Polymerisation :					
Stepwise and addition polymerisation, (free radical, cationic and anionic)	3	SEPT			
Comparison of step and addition polymerisation	1	SEPT			
Methods of polymerisation : bulk, solution, suspension and emulsion	4	OCT			
Various Types of Molecular Weights of Polymers :					
Molecular weight distribution	3	OCT			
Determination of molecular weight of polymer by viscometry and osmometry	1	OCT			
Introduction to light scattering and ultracentrifuge methods	4	NOV			
Effect of molecular weight and viscosity on properties of polymers	1	NOV			
Physical State of Polymers :					
Crystalline and amorphous behaviour	2	NOV			
Determination of crystallinity, mechanical strength and structure of polymers	3	NOV			
Thermal transition of polymers: Glass transition temperatures	1	DEC			
Monomer, Polymer Chemical Structure, Properties and Application of Various					
Polyethylene - LDPE, LLDPE, HDPE, HMDPE, Epoxy resin	2	DEC			

Polypropylene,Polystyrene and HIPS,ABS,PTFE,PMMA,Nylon-6,Nylon-66	7	JAN			
PET,Phenol Formaldehyde,PF	3	FEB			
Cellulose acetate,Cellulose nitrate,Polyvinyl alcohol	3	FEB			
Degradation of Polymers : Types of polymer degradation	4	FEB			
Mechanism of degradation	4	MARCH			
Advantage of Plastics in Areas of Electrical, Power Transmission,	6	MARCH			
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GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL303**

SUBJECT NAME : **RUBBER TECHNOLOGY**

FACULTY NAME : **ARCHANA MISHRA**

DESIGNATION : **LECTURER-PLASTIC TECH**

TOPIC	LECTURE / PRACTICAL CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
Sources and History of Natural and Synthetic Rubber	2	AUGUST	17,21		PPT
Aging of Rubber.	3	AUGUST	24,28,31		PPT
Production of Different Grades of Natural Rubber from Latex:					
Smoke sheet,Pale creep	2	SEPT	4,7		PPT
Synthetic Rubber: Definition,Classification	2	SEPT			
Scope,Advantages over natural rubber	2	SEPT			
Chemistry, Properties, Preparation of Various Synthetic Rubbers Such as :					
SBR,Nitriles, Butyl,Neoprene,Polyurethane,Silicon	9	OCT			
Chemistry, Properties and Uses of Synthetic Rubbers Such as :					
Hypalon,Ethylene propylene,Fluorocarbon rubber	3	OCT			
Mastication : Chemistry and physical aspects of mastication	1	OCT			
Machineries used for mastication	1	NOV			
Processing of Rubber	2	NOV			
Different Ingredients : Fillers,Accelerators,Activators	3	NOV			
Softners,Vulcanizing Agents,Age resisters	3	NOV			
Vulcanization : Sulphur,Non Sulphur	2	DEC			
Machineries Used For Rubber Processing	3	DEC			
Fabrication of Cellular Rubbers and Rubber Articles Such As:					
V-Belts,Conveyor belts,Hoses,Tyres,Tubes,Moulded goods	6	JAN			
Reclaiming of Rubber: Processes,Advantages,Applications	3	FEB			
Technical Analysis of Rubber: Decomposition,Solubility test	2	FEB			
Physical Testing of Rubber	7	MARCH			
Finishing of Rubber Components	4	MARCH			

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GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL206**

SUBJECT NAME : **FIBRE TECHNOLOGY**

FACULTY NAME : **ARCHANA MISHRA**

DESIGNATION : **LECTURER-PLASTIC TECH**

TOPIC	LECTURE / PRACTICAL CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
Fibres : Introduction,Classification	1	AUGUST	18/08/15		PPT
Structural principles of fibre forming polymers	2	AUGUST	20/8/2015,25/8/15		PPT
Orientation(X-ray Analysis), Recurrence Symmetry and crystallinity of fibres	3	AUGUST	27/08/15		PPT
Effect of orientation on fibre properties	1	SEPT	01/09/15		PPT
Various Textile Terms : Denier,Cotton count, Tex and Millitex, Tenacity, Elasticity	2	SEPT	03/09/15		PPT
Breaking strength, Twist, Moisture content and moisture regain, Crimp	5	SEPT	08/09/15		PPT
Dichroism, Birefringence (Double refraction)	2	OCT			
Fundamental and General Manufacturing Techniques of Fibres					
Spinning processes - Melt Spinning, Dry Spinning and Wet spinning	4	OCT			
General techniques of drawing of fibres	3	OCT			
Texturising of Fibres	3	NOV			
Various techniques of Texturising - False twist, Air texturising, Gear Crimping,	3	NOV			
Stuffer box crimping and knife edge, crimping process.	3	NOV			
Finishing of man-made fibres: General principles of finishing	1	DEC			
Various types of finishes- shape retention, firming, softening, water repellent	4	DEC			
stain repellent, antistatic soilrelease, antimicrobial and fire-resistant finishes.	4	JAN			
Dyeing of synthetic fibres: Introduction	1	JAN			
High temperature dyeing, Acid and base dyeing	6	JAN			
Chemistry, Manufacturing Process, Properties and Uses of Fibres :					
Polyester, Nylon-6	4	FEB			
Nylon-66, Acrylic	4	FEB			
Elementary Knowledge, Properties and Uses of Following Fibres :					
Polyvinyl alcohol, Polypropylene	2	MARCH			
Carbon, Metallic	2	MARCH			

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GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL207**

SUBJECT NAME : **HIGH POLYMER CHEMISTRY**

FACULTY NAME : **ARCHANA MISHRA**

DESIGNATION : **LECTURER-PLASTIC TECH**

TOPIC	LECTURE CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
Condensation Polymerisation :					
Concept of functionality	2	AUGUST	18/8/15,22/8/15,		PPT
Kinetics of condensation polymerisation	2	AUGUST	25/8/15,29/8/15		PPT
Carother's equation	4	SEPT	1/9/15,5/9/15,8/9/15		PPT
General conditions of polymerisability	4	SEPT			
Addition Polymerisation :					
Effect of substituents on addition polymerisation	2	SEPT			
Structure of Vinyl polymers	3	OCT			
Types of Initiators	3	OCT			
Principal and kinetics of free radical polymerisation	2	OCT			
Inhibition and retardation	3	NOV			
Degradation and Chain transfer	3	NOV			
Auto acceleration	2	NOV			
Polymerisation Depolymerisation Equilibria :					
Ceiling temperature	6	DEC			
Significance of ceiling temperature in addition polymerisation	2	JAN			
Copolymerisation :					
Copolymer equation	5	JAN			
Monomer reactivity ratios	3	FEB			
Types of co-polymerisation behaviours, block and graft copolymerisation	4	FEB			
Kinetics of Cationic Polymerisation	3	FEB			
Kinetics of Anionic Polymerisation	3	MARCH			
Living polymers	4	MARCH			

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