

# GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

## SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL309**

SUBJECT NAME : **PLASTIC PROCESSING-II**

FACULTY NAME : **MANOJ KR SHUKLA**

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
<b>Blow Moulding</b> : Introduction,Types of blow moulding	2	AUGUST	19,22		PPT
Hand and Power operated blow moulding	2	AUGUST	26,29		PPT
Extrusion blow moulding	2	SEPT	2,5		
Injection blow moulding,Stretch blow moulding	3	SEPT			
Blow moulding, defects and their remedies.	1	SEPT			
<b>Thermoforming</b> : Introduction,Methods of thermoforming	6	OCT			
Economics of heating,Thinning of sheets in relation to the forming process.	4	OCT			
<b>Rotational Moulding:</b>					
Introduction,Types of machines and materials used	4	NOV			
<b>Tansfer and Compression Moulding</b>					
Introduction,Materials used,Moulding cycles	3	NOV			
Machineries and equipments used	3	NOV			
Advantages and limitation of transfer and compression moulding	4	DEC			
<b>Calendering</b> : Introduction,Basic principles	2	DEC			
Material preparations,Types of calender	3	JAN			
Calendering variables	2	JAN			
Defects and their remedies	3	FEB			
<b>Casting</b> : Introduction	1	FEB			
Various casting process - Sheets casting of MMA,Rotational casting	5	FEB			
Typical applications of casting	2	MARCH			
<b>Construction and Working of Following Machines :</b>					
Scrap grinder	2	MARCH			
Bag cutting and sealing machine	3	MARCH			
Hot stamping machine	3	MARCH			

TOTAL	60				

# GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

## SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL301**

SUBJECT NAME : **ENGINEERING PLASTICS**

FACULTY NAME : **MANOJ KR SHUKLA**

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
<b>Poly Ethylene Terephthalate [ PET ] :INTRODUCTION,CHEMISTRY</b>	2	AUGUST	18'20,		PPT
Properties,Applications	2	AUGUST	25,27		PPT
<b>Poly Butylene Terephthalate [ PBT ] :Introduction,Chemistry</b>	2	SEPT.	1,3		
Properties	2	SEPT.			
Processing,Applications	2	SEPT.			
Polycarbonate [ PC ] :Introduction,Chemistry.Properties	2	SEPT.			
Processing and assembling techniques, Applications	2	OCT.			
<b>Polyphenylene Sulfide [ PPS ] :Introduction,Chemistry,Properties</b>	2	OCT.			
Processing techniques,Applications	2	OCT.			
<b>Polyphenylene Oxide [ PPO ] :Introduction,Chemistry,Properties</b>	3	OCT.			
Processing,Applications	3	NOV.			
<b>Acetals :Introductions,Chemistry</b>	1	NOV.			
Properties,Processing,Applications	4	DEC.			
<b>Polysulfone: Introduction,Chemistry,Properties</b>	3	JAN			
Processing,Applications	2	JAN			
<b>Polyether imide [PEI] :Introduction,Chemistry,Properties</b>	2	FEB			
Processing,Applications	2	FEB			
<b>PEEK:INTRODUCTION,PROPERTIES,CHEMISTRY</b>	2	FEB			
APPLICATIONS:GENERAL& COMPOSITES	2	FEB			
<b>POLYIMIDES(PI):INTRODUCTION,CHEMISTRY,PROPERTIES</b>	2	MARCH			
PROCESSING,Applications	2	MARCH			
<b>ABS:INTRODUCTION,CHEMISTRY,PROPERTIES</b>	3	MARCH			
PROCESSING,Applications	2	MARCH			
<b>FILLED POLYMERS</b>	2	APRIL			

<b>POLYMERS CONCRETES&amp;ADVANCED CERAMICS</b>	2	APRIL			
<b>SPECIALITIES POLYMERS:PROPERTIES,APPLICATIONS</b>	5	APRIL			
<b>TOTAL</b>	<b>60</b>				

# GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

## SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL302**

SUBJECT NAME : **RHEOLOGY & CHARACTERISATION OF POLYMERS**

FACULTY NAME : **MANOJ KR SHUKLA**

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
<b>Rheology of Polymers:</b>					
introduction, Difference between regular and polymer solutions	4	AUGUST	22,24,29,31		PPT
Newtonian and Non-Newtonian flow	3	SEPT	4,7		PPT
Time-dependent and Time-independent fluids	3	SEPT			
Visco elastic fluids	3	SEPT			
Mechanical models of visco elastic fluids	4	OCT			
Relaxation and Retardation Phenomenon	3	OCT			
<b>DTA (Differential Thermal Analysis)</b>					
Introduction, Methods of analysis, Conclusions of results	4	NOV			
<b>TGA (Thermo gravimetric Analysis)</b>					
introduction, Methods of analysis, Conclusions of results	4	NOV			
<b>TMA (Thermometric Analysis)</b>					
Introduction, Methods of analysis, Conclusions of results	4	DEC			
Introduction, Methods of analysis, Conclusions of results	4	DEC			
<b>DSC (Differential scanning calorimetry)</b>					
Introduction, Methods of analysis, Conclusions of results	5	JAN			
<b>GPC (Gel permeation chromatography)</b>					
Introduction, Methods of analysis, Conclusions of results	4	FEB			
<b>IR Spectroscopy</b>					
Introduction, Methods of analysis, Conclusions of results	5	FEB			
<b>Electron microscopy (SEM &amp; TEM)</b>					
Introduction, Methods of analysis, Conclusions of results	5	MARCH			
<b>X-Ray analysis</b>					
Introduction, Methods of analysis, Conclusions of results	5	MARCH			

TOTAL	60				

# GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

## SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **PL304**

SUBJECT NAME : **FIBRE REINFORCED PLASTICS**

FACULTY NAME : **MANOJ KR SHUKLA**

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
<b>Introduction to Fibre Reinforced Plastics, Principles of composite</b>	4	AUGUST	18,21,25,28		PPT
<b>Polymeric materials for the composites:</b> PEEK, PI, PEI	4	SEPT	08/01/00		
<b>Thermosetting Materials:</b> Unsaturated Polyester resin, Epoxy resin	4	SEPT			
<b>Particular applications of thermoplastic and thermosetting</b>	4	OCT			
<b>Unsaturated Polyester resins:</b> Types of unsaturated polyester resin and their	4	OCT			
Manufacture of unsaturated polyester resins	2	NOV			
Curing of unsaturated polyester resins	2	NOV			
Catalysts and accelerators used for curing of unsaturated polyester resins	2	NOV			
<b>Effect of Fibrous Reinforcement on Composite Strength:</b>					
Along Longitudinal, Along transverse	2	NOV			
<b>Fibre Glass</b>					
Introduction, Production	2	DEC			
Glass composition, Properties	2	DEC			
Fibre glass forms, Textured yarn	3	JAN			
Nomenclature, Fibre glass fabric	3	JAN			
<b>High Silica and Quartz</b>					
Introduction, Forms of high silica and quartz	4	FEB			
Thermal and Chemical properties, Applications	4	FEB			
<b>Carbon Fibre :</b> Introduction	1	FEB			
Production of Carbon fibre from Polyacrylonitrile (PAN): Characteristics of	4	MARCH			
Stabilisation of PAN	1	MARCH			
Carbonisation and Graphitization of PAN fibre	2	MARCH			
<b>Sheet Moulding Compound (SMC) and Dough moulding</b>					
Introduction, Processing Methods	3	MARCH			

Moulding defects and remedies	3	MARCH			
TOTAL	60				