

## GENERIC ELECTIVE COURSES (GE-07)

### Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
<b>Polymer in Toady's Life</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>12<sup>Th</sup></b>	<b>---</b>

### **COURSE OBJECTIVES:**

The Learning Objectives of this course are as follows:

1. To give an over view about the use of polymer in current lifestyle
2. The course is designed to provide comprehensive knowledge to the students regarding importance of polymer and its impact in life and the environment.
3. The course is designed to make students aware of the problems due to polymer and their solution.

### **LEARNING OUTCOMES**

The Learning Outcomes of this course are as follows:

After studying this paper, students will be able to

1. understand the importance of polymers in daily life and society
2. learn problems associated with polymers and solutions

### **SYLLABUS OF GE-07**

#### **THEORY:**

**(30Hours)**

#### **UNIT 1: POLYMERS**

**(7Hours)**

Introduction to polymers, properties, and resources polymer.

Classification of polymer, Brief details about Natural and Synthetic polymer(cellulose, starch, PE PP and PS)

#### **UNIT 2:PREPRATION OF POLYMERS**

**(8Hours)**

Polymerizations, different method of polymerizations, Modification of polymer, Polymercomposit.

#### **UNIT 3: COMMON USE OF POLYMER**

**(8Hours)**

Polymer is Packaging

Polymer in Textile

Polymers in civil and structural applications

Polymers in electronic devices

## **UNIT 4: POLYMER AND ENVIRONMENT**

**(7Hours)**

Impact of polymer on environment and their solution

Rules and Regulations of use of plastic and its management: Indian Perspective

Reuse of plastics

### **PRACTICALS:**

**(60Hours)**

- Isolate the cellulose from sugarcane bagasse and identify their properties
- Identify the functional group of polymer by chemical methods and spectroscopic method
- Prepare a packaging film and determine its thickness and hardness
- Separate the polymer from flexible packaging film and report the yield
- Demonstrates the degradation effect of plastic in polymers
- Determine the biocompatibility of plastic items.

### **ESSENTIAL/RECOMMENDED READINGS**

1. Fred W. Billmeyer Jr., (1984) Textbook of Polymer Science, Wiley-Interscience Publication John Wiley & Sons
2. Joel R. Fried(2014), Polymer Science and Technology" Prentice Hall.

### **ADDITIONAL RESOURCES**

1. Charles E. Carraher Jr.,(2017) Introduction to Polymer Chemistry, CRC Press.
2. O. Olatunji,(2024) Natural Polymers: Industry Techniques and Applications, Springer; 1st edition.

### **ASSESSMENT METHODS:**

All the examinations and assessment methods shall be in the line with the University of Delhi guidelines issued from time to time

### **KEYWORDS:**

Synthetic polymer, Polymerizations, Natural polymers, cellulose.