APPLIED CHEMISTRY (BS-ADP 8th Semester)

Module Code:	**Chem-471**
Module title:	**Polymers**
Name of Scheme:	**BS-ADP 8th Semester**
Department:	**School of Chemistry**
Faculty:	**Science**
Module Type:	**Compulsory**
Module Rating:	**2 credits**

OBJECTIVES

This course content will increase the understanding of student about Polymerization techniques; Basic theory, mechanisms, chemistry, processing and applications.

SYLLABUS OUTLINE:

1. Polymerization Mechanisms

Introduction, characteristics and significance, Classification including, synthetic and natural, thermoplastic and thermosets, Concept of homo and co-polymers, polyblends, Tacticity and its importance, Glass transition temperature, Molecular weight of Polymers, Polymerization types involving various mechanisms including addition and condensation polymerization, Ionic polymerization including anionic and cationic, Co-ordination polymerization.

2. Polymers Processing

Polymerization techniques – Bulk, Solution, Emulsion and Suspension techniques
Polymer Fabrication – extrusion, injection, modeling and blow molding of plastics.
Detailed description and uses of the following polymers:
Polyethylene, Polystyrene, Epoxy resins, Polyethylene tetrapthalate, Elastomers, Conducting polymers and Biopolymers.

RECOMMENDED BOOKS:

1. Applied Chemistry, Haq Nawaz Bhatti and Muhammad Salman, 2017, Caravan Book Publisher, Pakistan.
2. Industrial chemistry, B. K. Sharma, Krishna Prakashan Media (P) Ltd., Ed-15 (2006).
3. An Introduction to Polymer Chemistry, W.R.Moor, London Press, London.
4. Principles of Polymer Systems, Rodri-Guez, McGraw Hill Book Co. New York.
5. Modern Technology of Plastics and Polymer Processing Industries, NIIR Board