
SYLLABUS

DIVISION: Workforce Services

Revised: Spring 2015

CURRICULA IN WHICH COURSE IS TAUGHT: Polymer Manufacturing Technology

COURSE NUMBER AND TITLE: IND 295 Polymeric Materials (3 Credits)

CREDITS: 3

HOURS/WEEK LECTURE: 3

HOURS/WEEK LAB: 0

LECTURE/LAB COMBINATION: 3(0)

I. COURSE DESCRIPTION:

This is designed to provide the student with an understanding of polymeric material. Topics include natural polymers, polymer synthesis, polymer morphology, inorganic polymers, ionomers and polymeric materials applications.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT:

Required in the Polymer Manufacturing program

III. REQUIRED BACKGROUND: Basic understanding of polymeric materials or department approval

IV. COURSE CONTENT / COURSE OUTLINE:

Introduction
Nature of Polymeric Materials
Basic Definitions
Classifications of Polymers and Polymer Synthesis
Mechanisms of Polymerization: Growth and Kinetics
Co-polymers
Bio and Inorganic Polymers
Ionomers and Composite Materials
Molecular Imprinting
Molecular Weight Determination
Thermal Analysis
Spectroscopic Methods
Viscoelasticity and Rheology

V. LEARNER OUTCOMES:**VI. EVALUATION:**

<p>The student will:</p> <p>Gain an understanding of polymer synthesis and be able to choose polymers appropriate applications</p> <p>Determine how reaction kinetics influence polymer properties</p> <p>Understand the ties between morphology and projects</p> <p>Review methods of polymer characterization</p>	<p>Combination of attendance, participation, quizzes, homework, projects and test.</p>
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The course supports the following objectives:DCC Educational Objectives

1. Communication
2. Critical Thinking
3. Computational and Computer Skills
4. Understanding Culture and Society