MSE 3410 Introduction to Polymers
Fall Semester 2019
Department of Materials Science and Engineering

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Pre-requisites: C or better in CHEM 2310
Lecture: MWF 11:50am – 12:40pm, WEB L114
Credit Hours: 3

Text(s): Canvas notes
J.R. Fried "Polymer Science & Technology" (not required)

Course Description: This course will provide an overview of polymer materials. It is intended as a first course in polymers for students with a background in material science, chemistry, or general engineering. The emphasis of the course will be on the use of polymer materials as engineering materials. After a brief study of the molecular structure of polymers and the general structure of polymeric solids, the course will emphasize applications of polymers. At the end of the course, the student should have a wide appreciation of the ways polymers can be used, why and how certain polymers are selected for certain applications, and how polymers are formed or processed into something useful.
Course Outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

3. an ability to communicate effectively with a range of audiences

5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Content Overview:
The course will cover the following topics: Polymer classification and structure. Overview of polymerization techniques. Polymer conformations. Viscoelasticity and rubber elasticity. Polymers in solutions. Polymers at surfaces and interfaces. Properties of polymer melts, blends and block copolymer morphologies. Polymer processing and applications.

Grading & Evaluation Methods:

Home work (20%)
Two midterm exams (20% each)
Group project (20%)
Final Exam (20%)

Key Dates:
Monday, September 2nd – Labor Day – No School
Friday, August 30th – Last day to add and drop classes
Sunday – October 6th – 13th – Fall Break
Friday, October 18th – Last day to withdraw from classes
Thursday – Sunday November 28th – December 1st – Thanksgiving Break – No School
Thursday, December 5th – Last day of classes
Friday, December 6th – Reading Day

Friday, December 13th 10:30 am – 12:30 pm – Final Exam

Americans with Disabilities Act Statement:
“The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodation in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020
Faculty and Students’ Responsibilities: 

“All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.”

(V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.”