

(Textile Engineering Department)

Graduate

Course Title: **Advanced Physical Chemistry of Polymers**

Lecturer: **Dr. Mohammad Karimi**

Course Topics:

- A Brief Introduction to Polymer Science
- Chain Conformations in Polymers
- The Rubber Elastic State
- Polymer Solutions I
- Polymer Solution II
- The Glassy Amorphous State
- The Molten State
- Crystalline Polymers
- Crystallization Kinetics
- Chain Orientation
- Thermal Analysis of Polymers
- Gas-Polymer Interactions
- Thermodynamics of Polymer Blends
- Mechanical Behavior of Polymers
- Polymer Surfaces and Interfaces

Reading Resources:

- U. W. Gedde, "Polymer Physics", Chapman & Hall, 1995
- L. H. Sperling, "Introduction to Physical Polymer Science", Wiley, 2006