

# Polymer Morphology

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MSE 20-256-6??-001

Quarter: Spring, 1999

LEVEL: Graduate Elective; Undergraduate by Petition (encouraged)

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## Parts: (html)

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Polymer Morphology will explore the details of structures commonly encountered in polymeric materials. The course will cover both well understood morphologies as well as more applied, less well understood morphologies important to industrial applications. The approach will involve exploring morphology in terms of levels of structure. Atomic level structure, is often governed by thermodynamics and chemistry. The colloidal scale, which dominates polymeric materials, depends on a combination of kinetics and thermodynamics. Macroscopic scale structures generally are dominated by kinetic effects. The relationship between these levels of structure will be used to develop a full picture of the complex morphology of polymeric materials. The course will be geared towards the graduate level and a basic understanding of thermodynamics and diffraction will be needed.

The course will be topical in nature, reflecting the broad scope of morphologies seen in polymeric systems including: semi-crystalline phases, liquid/liquid phases, and immiscible phases of organic polymers and inorganic fillers.

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