

Fall 2022 COURSE ANNOUNCEMENT

Foundations of Polymer MEMS

ECE 676

Every day we use polymers without thinking about them. For instance, the Device and MEMS researchers in Shumaker Research Building use polymers extensively in fabrication processing, as well as the material of choice for realizing enhanced device functionality. In order to be more creative in using polymers, we need to develop a background in polymers and their physical properties. These properties can be chosen to define controlled self-assembly of highly ordered solid-state nanostructures, to fluid flows that are quite different from water, and to elastic and mechanical properties quite unlike those of inorganic semiconductors and metals. This course is designed to give engineers and science students a general reading background in polymer science. The course includes readings on polymer properties from two leading textbooks, together with independent readings and reports to the class by students on special topics of interest to them and their ongoing or potentially planned research. This course provides fundamental, experimental and applied information that would be relevant and valuable to students in engineering, medicine, medical physics, biochemistry, physics, chemistry, material science and biology.

Main texts: *Intro to Physical Polymer Science*, Sperling
Polymer Physics, Rubinstein and Colby

Prereqs: *None: Because of the unique multidisciplinary aspects of polymers & MEMS, interested graduate students from all departments are eligible and welcome to enroll.*

Course info: ECE 676 3:00 - 3:50 MWF 321 Lutz Hall

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