



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Organic and Printed Flexible Electronics

ECE 5833

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Conducting organic small molecules and polymers (structural, optical and electrical properties); printable metal-oxide semiconductors; Printing techniques, organic light emitting diodes; transport and carrier injection; organic transistors; organic lasers.

Prerequisites and Co-requisites:

Prereq: 3030, or permission of instructor for non-ECE majors; or Grad standing in engineering, biological sciences, or math and physical sciences.

Course Goals / Objectives:

- Gain a fundamental understanding of the field of organic and printed electronic materials, fabrication techniques and devices and their potential impact
-

Course Topics:

- Motivation for study of organic and printed flexible electronics
 - Materials properties/synthesis of printable semiconductors
 - Materials parameter space for design
 - Processing issues for organic and printable semiconductors
 - Organic light-emitting diodes
 - Organic and Printable Flexible Electronics
 - Organic solar cells
 - Molecular electronics with NDR & organic lasers
 - Carbon-based electronics (nanotubes and graphene)
 - Organic sensors (bio & chemical)/Future market opportunities
-

Designation:

Elective