THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Organic and Printed Flexible Electronics

ECE 5833

Description / Conditions

Transcript Abbreviation:
Flexible Electroni

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.

Course Levels:
Undegraduate (1000-5000 level)
Graduate (5000-8000 level)

Designation:
Elective

General Education Course:
(N/A)

Cross-Listings:
(N/A)

Course Detail

Credit Hours (Minimum if “Range”selected):
3.00

Max Credit Hours:
3.00

Select if Repeatable:
Off

Maximum Repeatable Credits:
(N/A)

Total Completions Allowed:
(N/A)

Allow Multiple Enrollments in Term:
No

Course Length:
14 weeks (autumn or spring)
12 weeks (summer only)

Off Campus:
Never

Campus Location:
Columbus

Instruction Modes:
In Person (75-100% campus; 0-24% online)

Prerequisites and Co-requisites:
or MATSCENG 3271
Prereq: 3030~~, or permission of instructor for non-ECE majors~~; or Grad standing in engineering, biological sciences, or math and physical sciences.

Electronically Enforced:
No

Exclusions:
Not open to students with credit for 7833 or 5194.04.

Course Goals and Learning Objectives

Course Goals / Objectives:
Gain a fundamental understanding of the field of organic and printed electronic materials, fabrication techniques and devices and their potential impact

Check if concurrence sought:
No

Contact Hours

Contact Hours:

Contact Hours For Each Topic.

Topic	LEC	REC out-of-class	REC in-class	Weekly LAB out-of-class	Weekly LAB in-class
Motivation for study of organic and printed flexible electronics	2.0	0.0	0	0.0	0
Materials properties/synthesis of printable semiconductors	4.0	0.0	0	0.0	0
Materials parameter space for design	4.0	0.0	0	0.0	0
Processing issues for organic and printable semiconductors	4.0	0.0	0	0.0	0
Organic light-emitting diodes	4.0	0.0	0	0.0	0
Organic and Printable Flexible Electronics	4.0	0.0	0	0.0	0
Organic solar cells	4.0	0.0	0	0.0	0
Molecular electronics with NDR & organic lasers	3.0	0.0	0	0.0	0
Carbon-based electronics (nanotubes and graphene)	4.0	0.0	0	0.0	0
Organic sensors (bio & chemical)/Future market opportunities	4.0	0.0	0	0.0	0
Total	**37**	**0**	**0**	**0**	**0**

Grading and Texts

Grading Plan:
Letter Grade

Course Components:
Lecture

Grade Roster Component:
Lecture

Credit by Exam (EM):
No

Grades Breakdown:

Grades Breakdown

Aspect	Percent
Class Discussions	20%
Class presentations	40%
Term Paper	40%

Representative Textbooks and Other Course Materials:

Title	Author	Year
Organic and Printed Electronics: Fundamentals and Applications,	G. Nosatp. D. Kupo. S. Ganz, P. Stanford , ISBN-13: 978-9814669740	

ABET Student Learning Outcomes

ABET-CAC Criterion 3 Outcomes:
(N/A)

ABET-ETEC Criterion 3 Outcomes:
(N/A)

ABET-EAC Criterion 3 Outcomes:
(N/A)

Embedded Literacies (UG courses only)

Embedded Literacies Info:

Attachments / Additional Notes or Comments

Attachments:
(N/A)

Additional Notes or Comments:
(N/A)