

ECE 3027 (Approved): Electronics Laboratory

Course Description

Electronic amplification, signal processing, and timing circuits. Experiments with electronics evaluation modules and use of Labview for Electronics Testing.

Prior Course Number: 327

Transcript Abbreviation: Electronics Lab

Grading Plan: Letter Grade

Course Deliveries: Classroom

Course Levels: Undergrad

Student Ranks: Junior, Senior

Course Offerings: Autumn, Spring

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 7 Week

Credits: 0.5

Repeatable: No

Time Distribution: 3.0 hr Lab

Expected out-of-class hours per week: 0.0

Graded Component: Laboratory

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Prereq: 2100 or 292 or 294 (Spring 2011) or 209, and enrollment in ECE or EngPhysics major. Prereq or concur: 3020 (323).

Exclusions: Not open to students with credit for 327.

Cross-Listings:

Course Rationale: Existing course.

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.1001

Subsidy Level: Baccalaureate Course

Programs

Abbreviation	Description
CpE	Computer Engineering
EE	Electrical Engineering

Course Goals

Use knowledge of circuits and electronics to design electronic circuits, and to measure and document performance of electronic circuits

Provide the student the experience of designing, constructing, testing, and debugging electronic circuits

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Transistor Amplifiers and Switches			3.0					
Op Amp Circuits			3.0					
Oscillators			3.0					
Digital to Analog Conversion			3.0					
Analog to Digital Conversion			3.0					
Voltage Regulation			3.0					
Filtering			3.0					

Representative Assignments

Laboratory Reports
Quizzes

Grades

Aspect	Percent
Laboratory Reports	70%
Quizzes	30%

Representative Textbooks and Other Course Materials

Title	Author
<i>Laboratory Notes</i>	Elec. and Comp. Engr. Dept.

ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
*	a	An ability to apply knowledge of mathematics, science, and engineering.
**	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
*	c	An ability to design a system, component, or process to meet desired needs.
	d	An ability to function on multi-disciplinary teams.
*	e	An ability to identify, formulate, and solve engineering problems.
	f	An understanding of professional and ethical responsibility.
*	g	An ability to communicate effectively.
	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.
**	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Additional Notes or Comments

converted prereq and exclusions to standard form.

Added "or 292 or 294 (Spring 2011) " to prereqs 4/11/12

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