

ECE 2061 (Proposed): Introduction to Digital Logic for Transfer Students Lecture

Course Description

Lecture-only component of ECE 2060, for transfer students. Introduction to the theory and practice of combinational and clocked sequential networks.

Transcript Abbreviation: IntDigitalLogicLec

Grading Plan: Letter Grade

Course Deliveries: Classroom, Greater or equal to 50% at a distance

Course Levels: Undergrad

Student Ranks: Sophomore

Course Offerings:

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 2.5

Repeatable: No

Time Distribution: 2.5 hr Lec

Expected out-of-class hours per week: 5.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Prereq: Math 1152 (152) or 1161.01 or 1161.02 or 1172 or 1181H or 161, and Physics 1250 or 1260 or 131, and CSE 1222 or 2221 or 202 or 205 or 221 or EnGraph 167 or Engr 1281.01H or 1281.02H or 1222 or Engineer 192.01H or 192.02H; and Engr 1182.01 or 1182.02 or 1182.03 or 1282.01H or 1282.02H or 1282.03H or Engineer 183 or 193H, or Engr 1186 (Engineer 186) and 1187 (187) and concur: 1188 (185) concurrent, or 1187 and 1188 and concur: 1186, or major in CIS or CIS-PRE; and CPHR 2.00 or above.

Exclusions: Not open to students with credit for 2000, 2000.02, 2001, 2010, 2060, 261, 290, or 294.01.

Cross-Listings:

Course Rationale: Allow transfer credit for students with prior course comparable to ECE 2060 lecture but no comparable lab.

The course is required for this unit's degrees, majors, and/or minors: Yes

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

General Information

Lectures 3x / week for 45 minutes a session.

Course Goals

Master the number representations used in today's digital systems and their arithmetic properties and conversion techniques

Master analyzing and synthesizing networks of combinatorial, digital logic elements

Be competent to analyze, design and synthesize digital clocked sequential circuits

Be familiar with modern computer tools for digital design, verification and simulation

Be familiar with digital circuit design methods

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Number systems and conversion	3.0							
Boolean algebra	2.0							
Karnaugh maps	2.0							
Multi-level gate circuits	2.0							
Multiplexers, decoders and PLDs	3.0							
Latches and flip-flops	3.0							
Registers and counters	3.0							
Timing (delays, timing diagrams)	2.0							
Analysis of clocked sequential circuits (general models for sequential circuits, timing charts, state tables, graphs)	4.0							
Design of clocked sequential circuits	4.0							
Finite state machines, flow diagrams, mapping to flip-flop circuits with logic gates.	4.0							

Representative Assignments

Homework

Midterm Exams

Final Exam

Grades

Aspect	Percent
Homework	20%
Midterm Exam 1	25%
Midterm Exam 2	25%
Final Exam	30%

Representative Textbooks and Other Course Materials

Title	Author
<i>Fundamentals of Logic Design</i>	Roth, Jr. and Kinney

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

Adapted from ECE 2060 10/6/2015 - gjv

Edited text info 5/9/17, CED

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