ECEN 4811 - Senior Laboratory

Fall 2026 Syllabus, Section 02, CRN 40736,

Credit hours: 1

Instructor

Robert Caven

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Vamsi Borra

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Public Instructor Information

Robert Caven

Instructor Title: Senior Lecturer
Instructor Professional Qualifications:

MS Engineering, Youngstown State University, 1989;

BEE, Kettering University, 1984

Office Location: Moser Hall 2025
Office Phone: 330.941.1750

Vamsi Borra

Instructor Title: Assistant Professor and Program Coordinator

Instructor Professional Qualifications:

Ph.D., Electrical Engineering, The University of Toledo, 2017

Master's, Electrical and Computer Engineering, Youngstown State University, 2014
Bachelor's, Electronics and Communication Engineering, Jawaharlal Nehru Technological University, 2011

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Course Description

4811. Senior Laboratory. Laboratory experiments and computer exercises in the areas of applied electromagnetics, energy conversion. Designed to accompany the co-requisite course. Prereq.: ECEN 3712. Prereq. or concurrent: ECEN 4844. 1 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	NASA Systems Engineering Handbook	NASA	979-8311817646
Optional	Systems Engineering Principles and Practice, 3rd ed.	A. Kossiakoff et al.	978-1119516668
Optional	Designing Science Presentations	M. Carter	978-0-12385969-3
Optional	Handbook of Technical Writing, 12th ed.	G.J. Alred et al.	978-1319362201
Optional	Writing in Engineering, A Brief Guide	R. Irish	978-0199343553

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24		Syllabus Review	
8/31	Watch videos--MEASURE: Voice of the Customer		
9/7		Presentation: YSU Environment, Safety, and Health Office	
9/14	Watch videos--ANALYZE: Concept Creation	Presentation: STEM Professional Services	Begin work on Project Proposal (Report 1).
9/21		Weekly team report: Design Proposal	Begin work on Project Proposal video.
9/28	Watch videos--ANALYZE: Concept Selection and Decision Making	Weekly team report: Design Proposal	
10/5		Weekly team report: Design Proposal	Assignment of peer review teams.
10/12	1. Watch videos--DESIGN: Top-down and bottom-up approaches to system design. 2. Watch videos--DESIGN: Design for Manufacturability and Assembly	Weekly team report: Design Proposal	Submit Project Proposal Report draft to peer reviewing team.
10/19	1. Watch videos--DESIGN: Reliability Engineering. 2. Watch videos--DESIGN: Failure Mode and Effects Analysis	Weekly team report: Design Proposal	Return peer review to report writer. Submit promotional brochure to Graphic Services for printing. Submit link for Project Proposal video.
10/26		Weekly team report: Design Proposal	Upload peer review summary (that your team prepared) to Blackboard. Upload Project Proposal Report (Report 1) to Blackboard.
11/2		Weekly team report: Preliminary Design	
11/9		Weekly team report: Preliminary Design	
11/16		Weekly team report: Preliminary Design	Submit Preliminary Design Report draft to peer reviewing team.
11/23		Weekly team report: Preliminary Design	Return peer review to report writer.
11/30		Weekly team report: Preliminary Design	Upload peer review summary (that your team prepared) to Blackboard. Upload Preliminary Design Report (Report 2) to Blackboard. Upload team self-assessment to Blackboard.

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.