Spring 2026

FIU

Engineering
& Computing

Electrical & Computer Engineering

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Class's: EEL 5741, EEL 6894

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Office: EC1272

Class's: CAI 1850, EEL 6803, EEE 4304C

Dr.Roelant

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Class's: EEL 4476, EEL 6485

Dr.Georgakopoulos

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Class's: EEL 3580

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Class's: EEL 4476, EEL 6485

Dr.Mohammed

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Class's: EEL 6261

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Class's: EEL 5482

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Class's: EEL 4005

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kzekios@fiu.edu

Office: EC2940

Class's: EEL 4410, EEL 6468

TABLE OF CONTENTS

FIU - ELECTRICAL AND COMPUTER ENGINEERING

CAI 1850 EDGE ARTIFICIAL INTELLIGENCE

Step into the future of intelligent technology. Discover how smart devices make real-time decisions without the cloud. This course is a hands-on, no-prerequisite course that teaches you to deploy AI at the edge—fast, efficient, and innovative. Perfect for beginners and tech enthusiasts ready to shape tomorrow

- Introduction to AI and Edge AI
- Real-World Applications
- Edge AIHardware
- Algorithms & Optimization
- Building & Managing Datasets
- Designing & Deploying Edge AIApplications

FACULTY: GUSTAVO CHAPARRO

Email: gchaparr@fiu.edu

CLASS TIME: ONLINE COURSE

Why Take This Course?

- No prior AI experience needed
- Prepares you for careers in AI, IoT, and embedded systems

Textbook

- AI at the Edge: Solving Real-World Problems with Embedded Machine Learning. Situnayake & Plunkett, 2023.

SPRING 2026

FIU- ELECTRICAL AND COMPUTER ENGINEERING

EEE4304C ELECTRONICS II AND LAB

Advance your electronics knowledge with practical design and analysis of modern circuits. This course emphasizes amplifier design, frequency response, and feedback principles, while introducing real-world applications like power stages and DC-DC conversion. Hands-on labs ensure you gain the skills to build and test circuits that power today's technology.

- Differential and Multistage Amplifiers
- Frequency Response
- Feedback
- Output Stages and Power Amplifiers
- Filters
- Oscillators
- DC-DC Converters

FACULTY: GUSTAVO CHAPARRO

Email: gchaparr@fiu.edu

CLASS TIME: TU-TH 5:30 PM- 7:15 PM

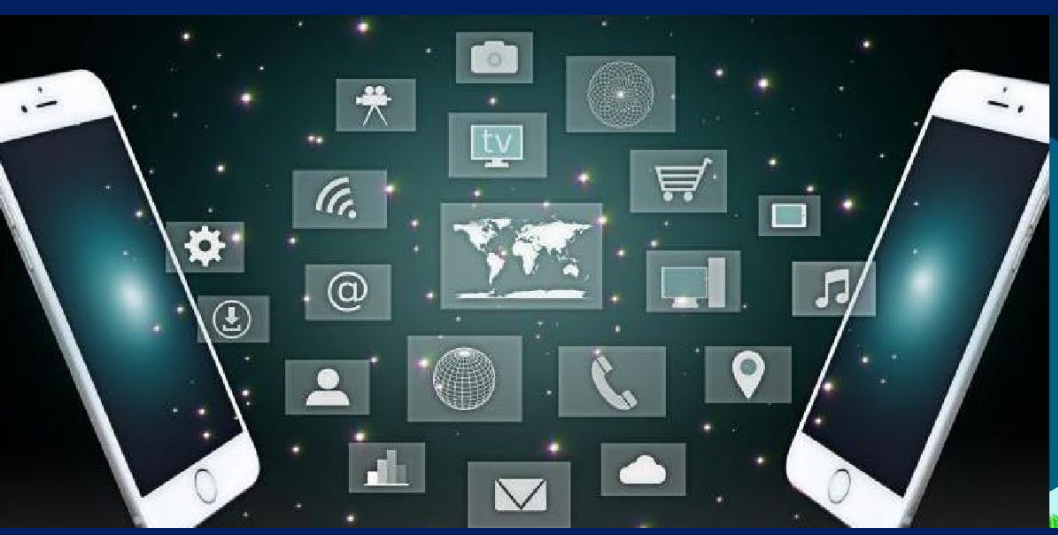
Why Take This Course?

- Learn advanced techniques used in analog and mixed-signal design.
- Gain practical skills with industry-standard tools and lab equipment.
- Prepare for careers in electronics, embedded systems, and power engineering.

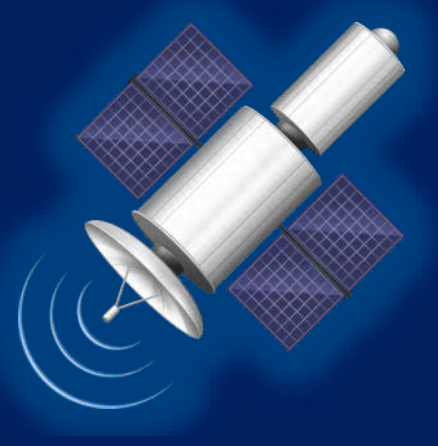
SPRING 2026

EEL 3580 – Introduction to Wireless Communication Systems – Spring 2026 Department of Electrical & Computer Engineering, Florida International University

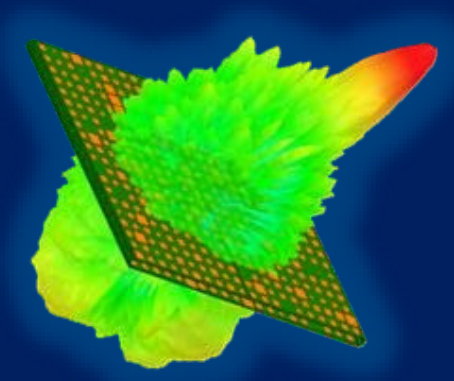
Classroom: EC2830 | Class Time: TuTh 12:30pm-1:45pm | Professor: Stavros Georgakopoulos



- Students will learn the fundamental blocks of wireless communication systems
- Students will be trained on state-of-the-art design software
- Students will learn through hands-on learning homework and projects using software-defined radio toolkits
- Course grading will be based on homework, quizzes, and a final project
- This course will not have any tests or final exam
- Prerequisite: EEL 3110C Circuit Analysis and Lab or permission of the instructor
- If you have any questions please contact Prof. Georgakopoulos at georgako@fiu.edu



Learn how to set up a communication system



Be trained on state-of-art simulation software

EEL 4005: Measurements and Instrumentation in Electrical Engineering

Spring 2026

In-person andin-lab

From past students:

- *Learned competences my field is searching for in new graduates*
- *…by far the most engaging class I have ever taken at FIU …*

Contact:

vpozdin@fiu.edu

Prerequisites:

EEL 3110C and EEL 2880

This course provides theoretical, hands-on, and computational introduction to electrical measurements, instrumentation, and metrology. Students will examine how electronic measurements are conducted in real-world situations, engage in interactive labs, and utilize cutting-edge software tools to collect measurements and model devices. In addition, this course delves into advanced instrumentation concepts, including measurements in noisy environments, lock-in amplifiers, cryogenic temperature measurements, and safety.

Course Topics

Basic concepts and terminology of electrical measurements, instrumentation, and metrology.

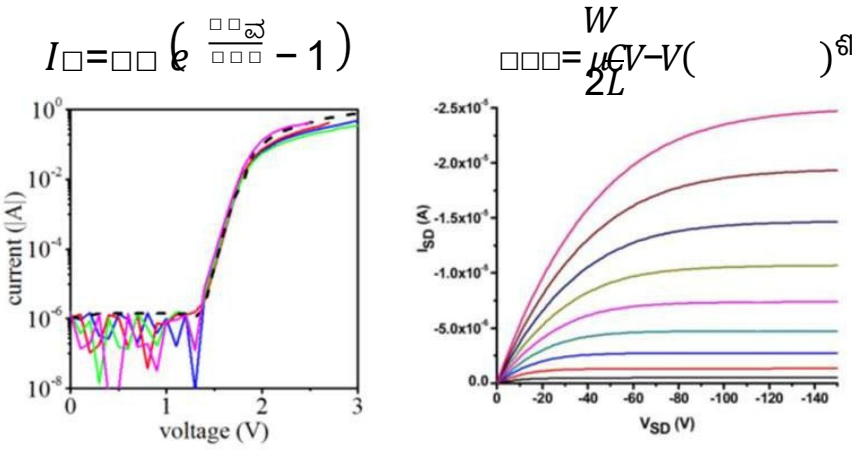
Measurements used in electrical engineering practice and research.

Development of measurement instrumentation that incorporates noise minimization techniques.

Use of LabView for control of instruments for data acquisition.

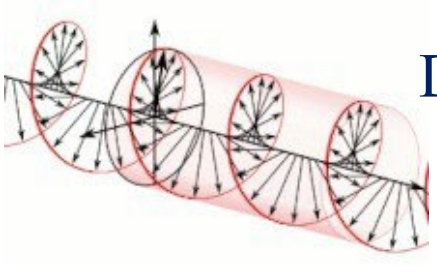
Use of Matlab for data processing and fitting.

Use of Cadence to model and extract device parameters based on collected data.



LabVIEW

cadence



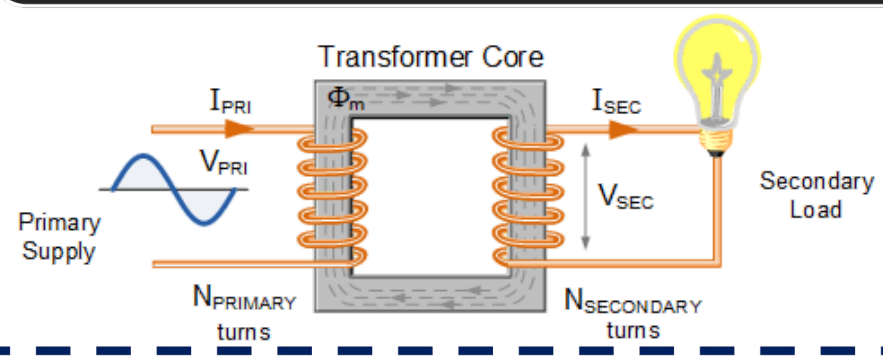
EEL 4410 – Introduction to Fields and Waves
Department of Electrical & ComputerEngineering
Florida International University
Spring, 2026

Revamped Course!

Classroom	EC 2830	Class Time	Tue.&Thu.11:00 pm - 12:15 pm

Faculty	Dr. Constantinos Zekios

Identify, Formulate, Solve EM Problems

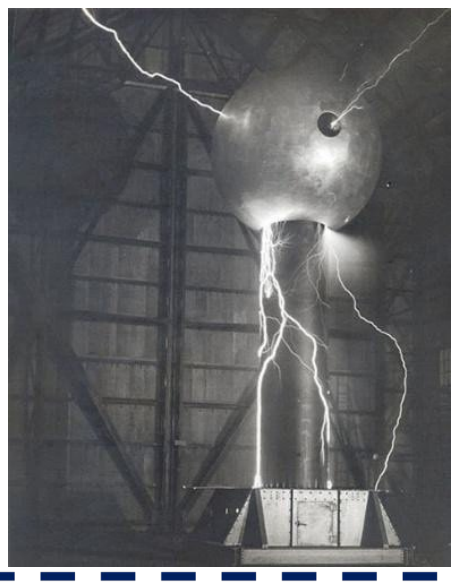


Active Learning

Be trained on State-of-the-Art Simulation Software

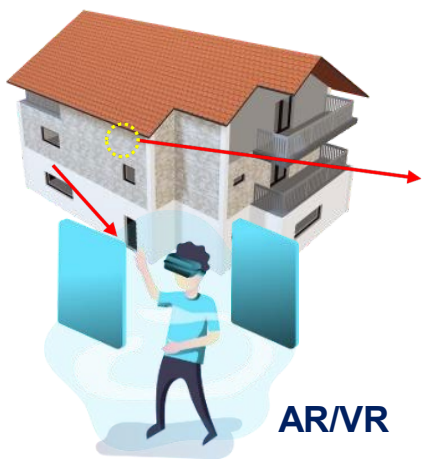
Conduct Experiments

static fields/time-varying fields/waves



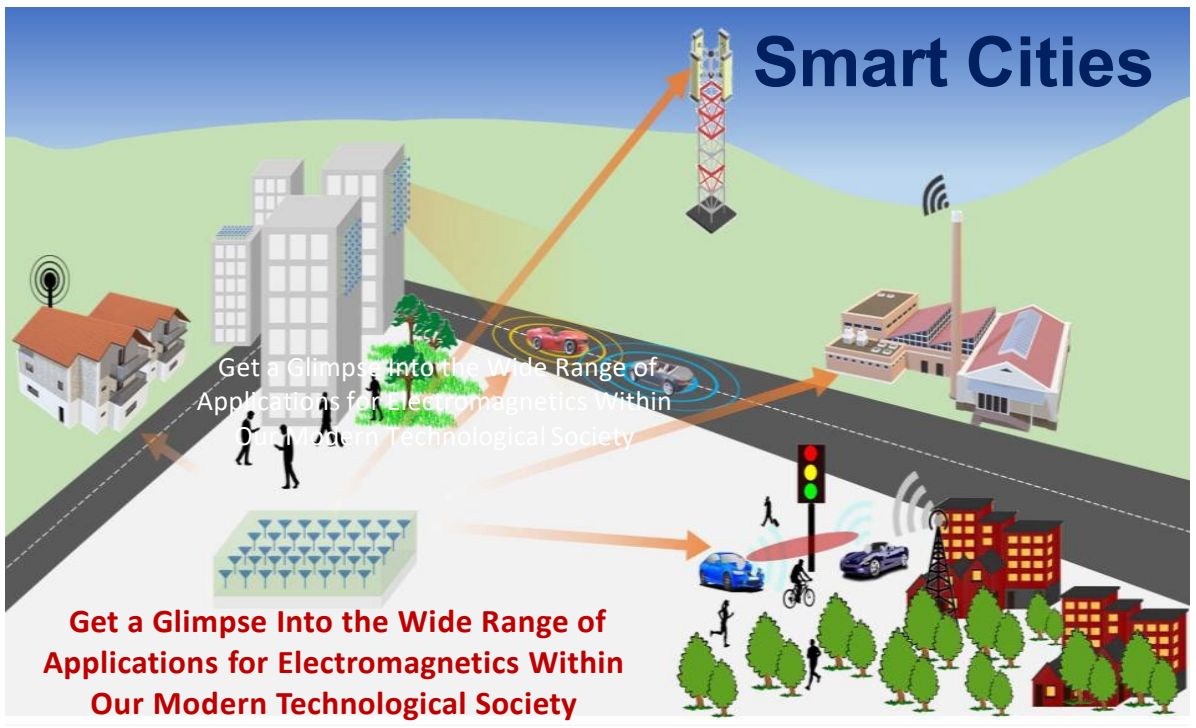
Exciting Projects & Assignments

Understand Our World



AR/VR

Hologram



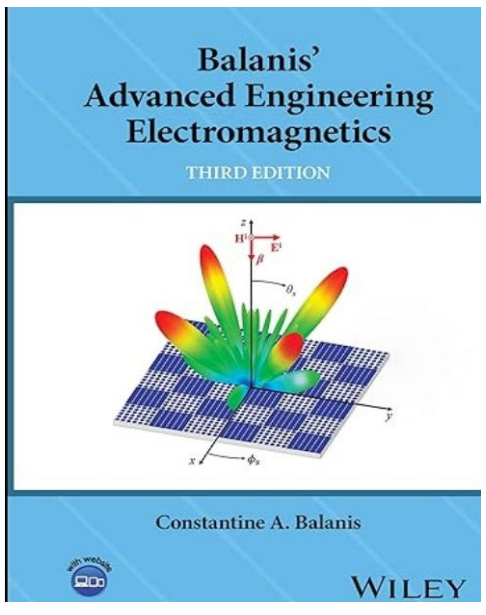
Get a Glimpse Into the Wide Range of Applications for Electromagnetics Within Our Modern Technological Society

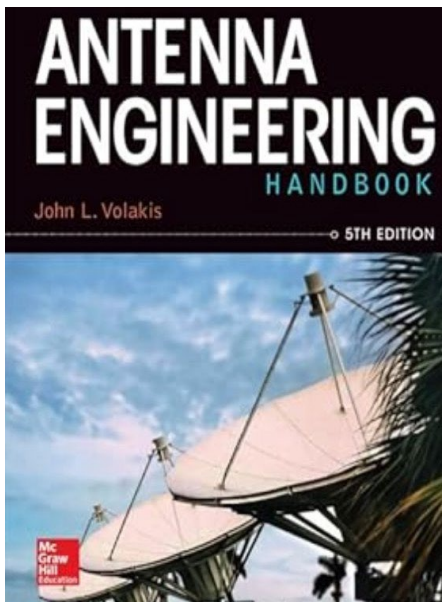
EEL 5482: Fields & Waves Engineering
Spring 2026

This is a standard first year graduate course on Fields and Waves. It covers the fundamentals of guided waves, communication links and propagation, including Radio Frequency (RF) sources, waveguides, fiber optics, metamaterials, adv. antennas and arrays, automotive radars, and the basics of well-known simulation tools. Moreover, it covers methods to simplify RF/electromagnetic problems into practical set-ups for numerical solutions, including high density RF packages for chips and EMI/EMC applications. The course is a must for expertise in microwaves, antennas, radars, and for electromagnetic interference and compatibility.

Prerequisite: Basic knowledge of fields and waves andgraduate standing (EEL 4410Fields& Waves).

Recommended Book: Adv. Engineering Electromagnetics, 3rd ed, by Balanis (all material will be in slides)





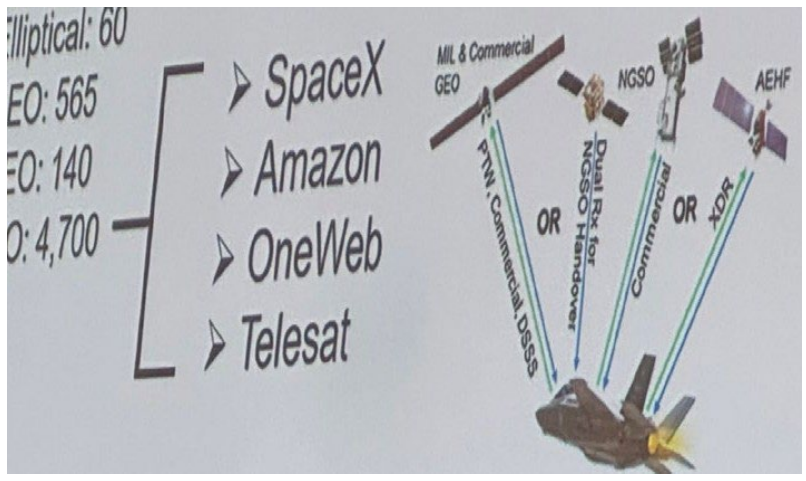
Instructor: Prof. John Volakis - author of Antenna Engineering Handbook and 8 other books

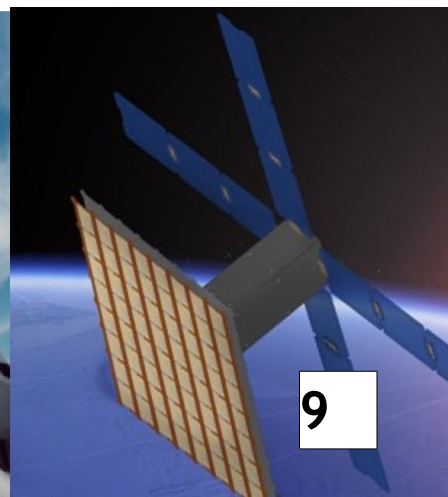
Why take this course:

Wireless technologies will continue to change our lives.

In this course, you will learn:

1) Key components that make a radio or a cell phone work;
2) Satellite communications links (a rapidly growing field);
3) How RF/microwave electronics and sources operate;
4) About metamaterial properties;
5) How key software packages work;
6) About radars & automotive guidance;
7) About satellite links and RF front-ends/chips.



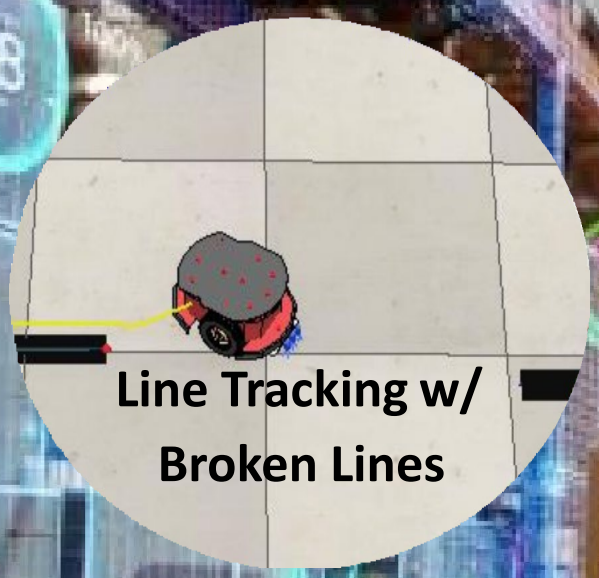


Want to learn technologies supporting autonomous robots/vehicles?

Welcome to **EEL5669** Autonomous Systems and Controls. You will

- Understand the basic principles of mobile robotics
- Gain knowledge of various types of locomotion mechanisms used in mobile robots
- Learn about sensors and perception techniques employed in mobile robotics
- Explore methods for robot localization and mapping
- Understand path-planning algorithms for autonomous navigation

Hands-on & Creative Projects



Past students' experience:

"Theway in which Dr. Baitaught and guided us was incredible, and at the same time, he, through each module seen in class, provided us with solid knowledge regarding this science, robotic engineering. His teaching was excellent. Also, I think that the study of robotics sciences was encouraged in a simple way…"

"the course material was extremely interesting, and the professor engaged us into learning"

"Learning about how to integrate the electrical, mechanical and mathematical concepts into developing a successful autonomous robot."

"The projects we did were the most successful part of this class it helped us learn about a computer software program that can help student get more into robotic simulation"

More info: https://hcps.fiu.edu/?p=678

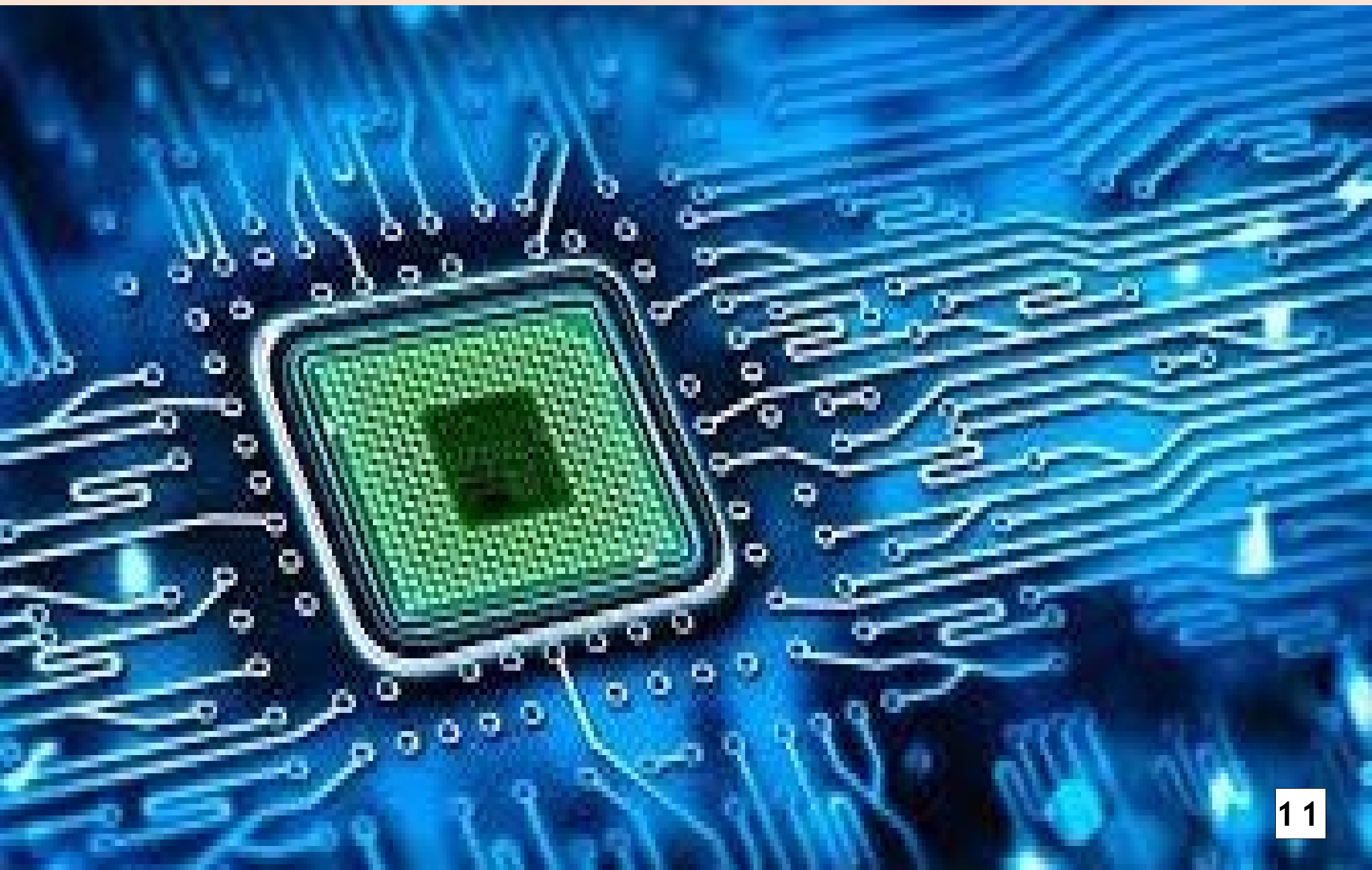
Contact: Dr. Bai, obai@fiu.edu

EEL5741 Advanced Microprocessor Systems (Fully on-line)

This graduate course delves into the design, analysis, and optimizationof modern computersystems. Building on basic computer knowledge from undergraduate studies, this course explores advanced topics and cutting-edge research that drive the performance and efficiency of contemporary processor architectures and systems. Students will engage with complex concepts such as pipelining, memory hierarchy, static/dynamic exploitation of instruction-level parallelism, and parallel and distributed computing systems. By the end of this course, students will understand why computers work the way they do and appreciate the art of building computer systems toexecute programs. They will be prepared to contribute to advancements in computer architecture and anticipate future advancements in computer architectures and systems.

Similar courses have long been considered as the core requirements in many well-established ComputerScience and Engineering programsworldwide.

Need moreinformation?
Contact Prof. Gang Quan gaquan@fiu.edu



FIU | Engineering & Computing

FLORIDA INTERNATIONAL UNIVERSITY

Spring 2026

EEL-6261 Power Systems Engineering

Jan 05, 2026 - Apr 21, 2026

Thursday, 5:00 to 7:30 PM, EC 3930

Course Topics

- Review ofPower System equipment models, power flow
- Characteristics of power generation units.
- Economic dispatch of thermal units, methods of solution… a deeperlook
- Environmental dispatch
- Unit commitment, solution techniques, recent advances.
- Generation with limited energy supply
- Energy production cost models for fuel budgeting and planning
- Control of generation and interchange evaluation
- Power Systems Security Analysis
- State Estimation.
- Practical applications
- AI applications in above topics

Course Objectives

- Understandhowpower systems work, including generation, operation, and control.
- Learn to perform power flow and economic dispatch analysis for efficient power generation.
- Study unit commitment and energy management methods used in real power plants.
- Gain knowledge of power system security and state estimation to ensure reliable operation.
- Use software tools and simulations to analyze and control power systems.
- Apply course concepts in practical projects and case studies based on real utility operations.
- Familiarize the students with practical applications of AI in Power Systems Operations

Prerequisites

EEL-4214/15 or permission of instructor

Course Instructor: Prof. Osama A. Mohammed

mohammed@fiu.edu

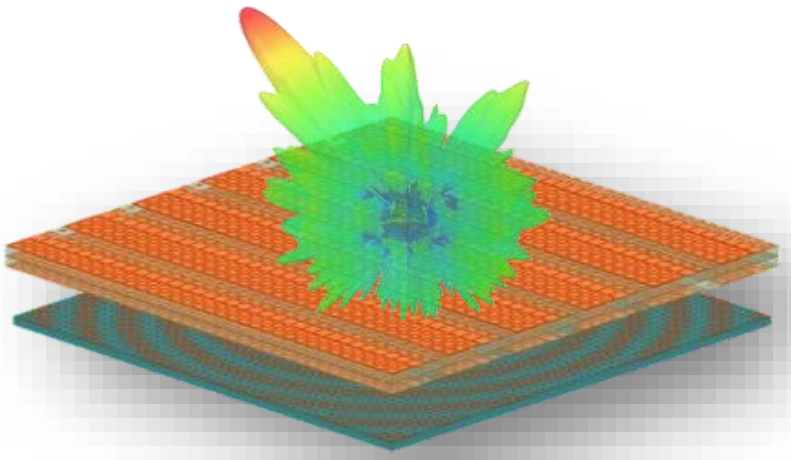
305 348-3040

http://www.aln.fiu.edu/EEL6261

EEL 6468 – Adaptive and Smart Antennas Department of Electrical & Computer Engineering Florida International University
Spring, 2026

Class Time	MoWe 12:00PM - 1:15PM	Classroom:	EC 2830
Faculty	Dr. Constantinos Zekios		

This course covers advanced concepts on phased arrays



antenna principles

beamforming principles

semiconductor technology

Identify, Formulate, Solve Antenna Problems

Active Learning

Projects & Assignments

Understand Antenna & Microwave Theory

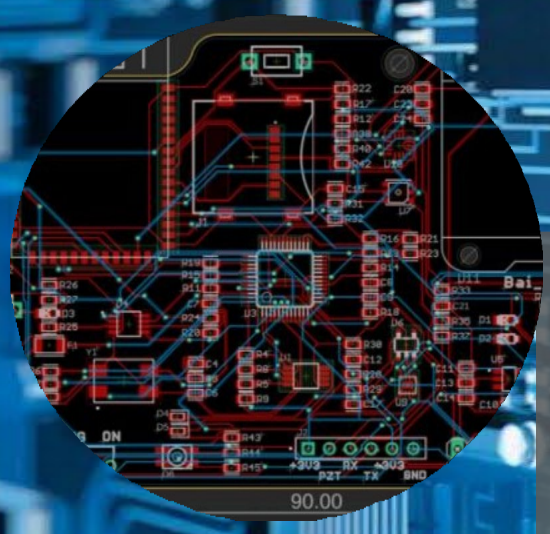
Want to Build Solid Skill on PCB Design of Industrial-Level Electronics?

Welcome to **EEE6765** Advanced Embedded Systems Design and Implementation for IoT Applications. You will

- UnderstandPCBFundamentals andElectronicDesign Objectives
- Gain hands-on experience with industry-standard PCB design of Autodesk Fusion Electronics Develop the ability to create clear and organized schematic diagrams
- accurately represent electronic circuits

- Learn best practices for PCB layout, including component placement, routing strategies, and layer stackup considerations.
- Understand the importance of layout optimization for signal integrity, thermal management, and manufacturability

Industrial Level PCB Designs



Past students' experience:

"Being able to use tools that can be used in industry (Eagle AutoCAD) provided me with a valuable skill. I appreciate how we used known examples to first practice and by the end we used the skills to explore and work on our own creative schematics and diagrams. Dr. Bai is very knowledgeable in the field to provide great feedback and learn throughout the semester."

"overall professor Bai is one of the bast instructors i had taken class with. he is nice person and very good instructors."

"This course able us to learn PCB design which is the most important skill for electrical engineers."

"This course is highly practical, helping to enhance design skills and better lay the foundation for theoretical understanding."

More info: https://hcps.fiu.edu/?p=686
Contact: Dr. Bai, obai@fiu.edu

FIU | FLORIDA INTERNATIONAL UNIVERSITY

Department of Electrical & Computer Engineering

EEL 4476 – Radiation Detection and Measurement
EEL 6485 – Adv. Radiation Detection

Instructor: Dr. David Roelant **Credits:** 3 each

Course Overview

This course provides an. introduction to the principeles and applications of radiation detection and measurement. Students will explore the physical interactions of radiation with matter, various processorigetion. and radiation spectroscopy, and radiation spectroscopy.

Topics Included

- Gas-filled, scintiliation, and semiconductor detectors
- Neutron detection methods
- Radiation dosimetry principes
- Applications in nuclear security
- Signal processing for radiation measurements
- Radiation spectroscopy techniques
- Applications in medical imaging
- Siginal processing for radiation measurements
- Radiation spectroscopy
- Applications in medical imaging

Why Take These Courses?

- Gain valuable skills for careers in nuclear engineering, health physics, homeland security, and other ECE/RF flelds.
- Learn use of radiation detectors for nucleer, medical, and environmental applications.

Who Should Enroll?

Undergraduate and graduate students in ECE or related fields such as huclear/ radiation angineering, health physics, or anyone interested in radiation detection and measurement

EEL6894 Real-Time Systems & Applications

In real-time computing, getting the right answer isn't enough it has to arrive on time.A late result can be as catastrophic as a wrong one. From autonomous vehicles, life-saving medical devices, to high-frequency trading and smart infrastructure, timing is a fundamental pillar of safety, efficiency, and success —not merely an optional feature. This graduate course is structured with two integrated segments to provide both a strong theoretical foundation and a deep, exploratory research experience. The first half establishes core principles through lectures on real-time system design, scheduling, and verification, culminating in an open-book exam to reinforce your understanding. The second half transitions into a collaborative seminar where students will work in small teams to investigate cutting- edge topics such as real-time AI. Activities include presenting research papers, executing a semester-long project, and delivering both a formal presentation and a publishable-quality report. By the end of the course, you will have mastered essential concepts, sharpened your research skills, and develope datangible piece to distinguish yourself

in the competitive technology landscape.
Need more information?

Contact Prof. Gang Quan gaquan@fiu.edu

FIU - ELECTRICAL AND COMPUTER ENGINEERING

EEL6803 ADVANCED DIGITAL FORENSICS

Dive into the world of digital forensics with this introductory course. Learn the fundamentals of investigating digital crimes, analyzing digital evidence, and understanding the legal and ethical considerations in the field. Perfect for those looking to enhance their computer engineering and cybersecurity technical skills.

- Digital Evidence Collection
- Data Extraction Techniques
- Network Forensics
- Mobile Device Forensics
- Legal and Ethical Issues in Digital Forensics
- Emphasis on hands-on labs and practical exercises

FACULTY: GUSTAVO CHAPARRO
email: gchaparr@fiu.edu

CLASS TIME: FR 6:00 PM - 8:30 PM

CLASSROOM: EC-1109

Deliverables:

- 3 hands-on projects assignments
- 1 research paper presentation
- 1 final research project paper
- 1 final take-home exam

SPRING 2026

FIU | Department of Electrical & Computer Engineering

ENU 4004 – Introduction to Nuclear Engineering in ECE

ENU 5006 – Fund. In Nuclear Engineering in ECE

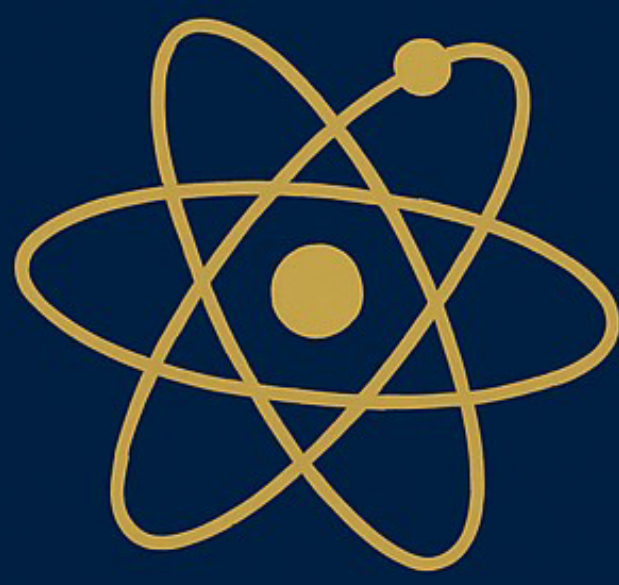
Instructor: Dr. Jeremy Smith

COURSE OVERVIEW

Fundamentals in Nuclear Engineering in ECE provides a comprehensive ond application-focused introduction to foundations of nuciear engineering, This course explores the physics, engineering principles, and real-world systems that shape modern nuclear used in power generation, radiation delection, and advanced reactor concepts.

TOPICS COVERED

- Principles of nuclear physics
- Neutron interactions and transport
- Nuclear fission and fusion fundamentals
- Reactor types and operation
- Radiation detection and measurement
- Nuclear materials & fuel cycles
- Power generation and energy sytems
- Safety, shielding, and environmental considerations



WHY TAKE THIS COURSE?

Build foundational knowledge for careers in clean energy, radiation detection, nuclear modeling, and national security,

WHO SHOULD ENROLL?

Graduate students in ECE, IoT/AI, physics, mechanical engineering, materials, or anyone interested in *engineering behind nuclear techno-*

Credits: 3

Prerequisite/Corequisite: PHY 2048

FIU

Engineering & Computing

Electrical and Computer Engineering

SCAN ME

https://ece.fiu.edu/index.html

Florida International University

College of Engineering & Computing

Department of Electrical and Computer Engineering

1055 West Flagler Street, EC 3900