

GRADUATE PROGRAMS INFORMATIONAL LUNCHEON

Applied Data Science & Artificial Intelligence Systems (ADS & AIS) Electrical & Computer Engineering (ECE)

November 5, 2025 2340 Reitz Union

Speakers:

Dr. Catia Silva, MSADS & MSAIS Program Coordinator Pam Simon, MSADS & MSAIS Admissions Staff Lisa Hibbs, MSADS & MSAIS Academic Advisor Julissa Nunez, ECE Admissions Staff

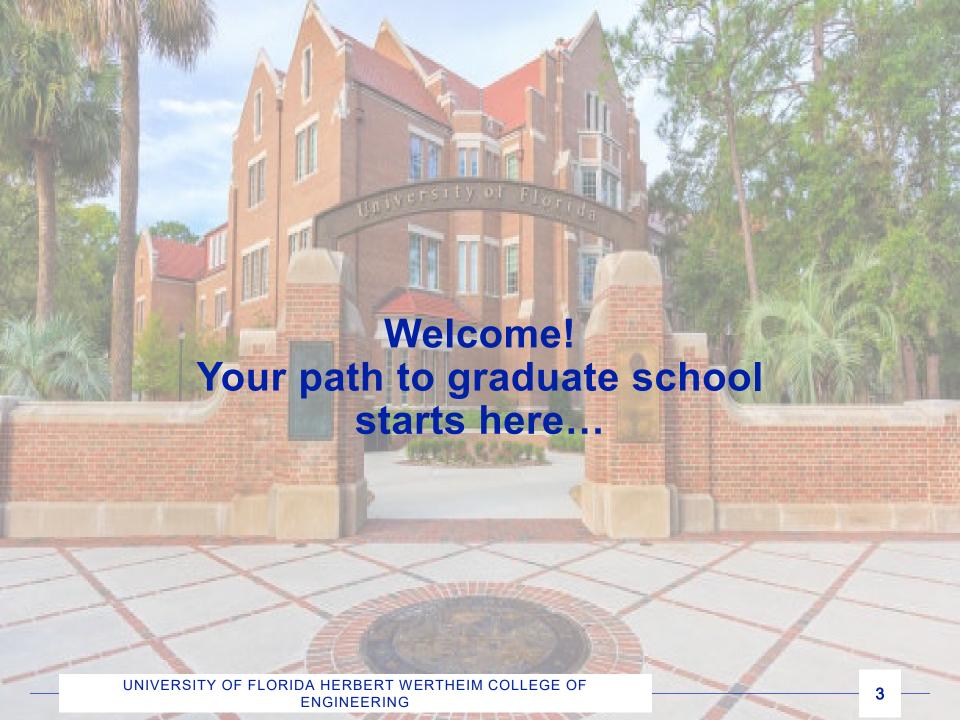


11/05/2025

HWCOE Interdisciplinary MS Programs

M.S. in Applied Data Science (MS ADS) & M.S. in Artificial Intelligence Systems (MS AIS)

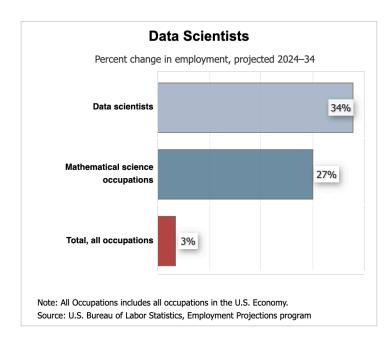
Catia S. Silva, Ph.D.
Program Coordinator MS AIS & MS ADS
Instructional Associate Professor, ECE



Program Overview M.S. in Applied Data Science

M.S. in Applied Data Science

- The <u>Master of Science</u> (M.S.) in <u>Applied Data</u> <u>Science</u> (MSADS) addresses the rising demand for data science professionals in today's dynamic technological landscape.
- Through its <u>interdisciplinary</u> approach, the program equips students with a comprehensive skillset, it merges knowledge from diverse fields such as computer science, statistics, business, and a chosen specialization area.
- The MS program is an <u>in-person</u>, <u>non-thesis</u> major in Applied Data Science with a total of <u>30 credits</u> hours.

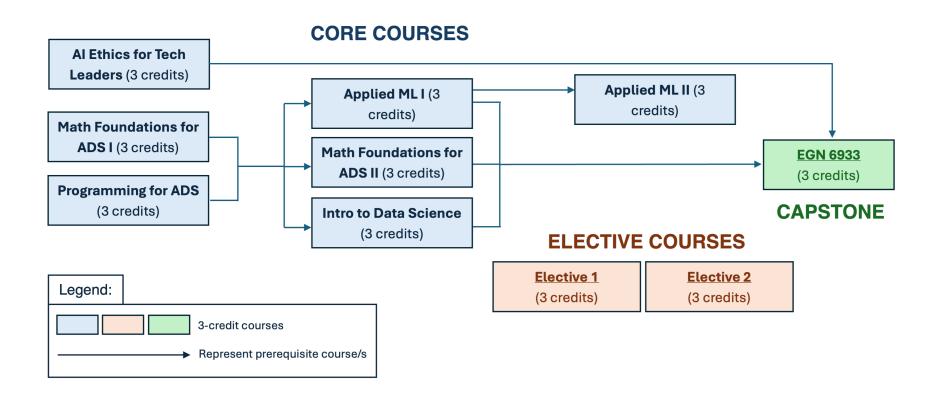


Target Audience & Industry Careers

- The program is designed for students or working professionals with a <u>B.S.</u> degree in a non-computing engineering field.
 - Non-computing engineering majors include aerospace, agricultural and biological, biomedical, civil, environmental, industrial, mechanical, transportation engineering, and more.

The program will train you for a wide range of <u>industry careers</u> including finance and insurance, healthcare and social assistance, information, manufacturing, transportation, scientific and technological services, retail trade, and more.

Curriculum Flowchart



Curriculum – Elective Courses

Elective Courses (choose 2 in one specialization area)

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Al	EEL 5406 Computational Photography	ESI 6617 High-Dimensional Data Analytics	EEE 6512 Image Processing and Computer Vision	
Biomedical	EGN 6938 Biomedical Data Science	BME 6522 Biomedical Multivariate Signal Processing	BME 4760 Multimodal Data Mining	
Agricultural and Biological Engineering	ABE 5643C Biological Systems Modeling	ABE 6649C Advanced Biological Systems Modeling	ABE 6840 Data Diagnostics	
Chemical Engineering	ECH 6845 Chemical Process Data Science	ECH 6937 Fundamentals of Artificial Neural Networks	Note: some courses are not available every semester, please plan your electives i advance and consult the	
Data Analytics in ISE	EIN 6905 Data Analytics for System Monitoring	ESI 6617 High-Dimensional Data Analytics		
Engineering Education	EGS 6020 Research Design in Engineering Education	EGS 6012 Research Methods in Engineering Education	schedule.	
Environmental	ABE 6035 Advanced Remote Sensing: Science and Sensor	OCP 6168 Data Analysis Techniques for Coastal Ocean Engineers	EEE 6512 Image Processing and Computer Vision	
Transportation	EGN 5215 ML Applications in Civil Engineering	TTE 6505 Discrete Choice Analysis		

Standard Plan of Study

	Year 1	Year 2
Fall	 EGN 5447 Mathematics for Data Science for Engineers EGN 5442 Programming for Applied Data Science EGS 6216 AI Ethics for Tech Leaders 	 EEE 6778 Applied Machine Learning II EGN 6933 Elective Course EGN 6933 Elective Course
Spring	 EGN 6446 Mathematics for Data Science for Engineers II CAP 5771 Introduction to Data Science EEE 5776 Applied Machine Learning 	EGN 6933 Project in Applied Data Science

Internship & Research

- You may count <u>up to 3 credits of internship work</u> towards your degree.
 - Upon approval, a 3-credit internship would substitute a 3-credit elective course.
- You may <u>engage in research</u> in several forms:
 - As course credits, on a volunteering basis at 0-credits.
 - As a University employer, under an OPS Student Assistant or Research Assistant (RA) position¹.
- You may serve as a Teaching Assistant (TA) or OPS Grader.
 - This would not count towards your degree, but it may be a valuable professional experience¹.

¹International students must always consult with their UF International Advisor prior to enrolling in any employment activity (paid, unpaid, volunteering, etc.).

Example – Plan of Study w/ Summer Internship

	Year 1	Year 2
Fall	 EGN 5447 Mathematics for Data Science for Engineers EGN 5442 Programming for Applied Data Science EGS 6216 AI Ethics for Tech Leaders 	 EEE 6778 Applied Machine Learning II EGN 6933 Elective Course EGN 6933 Elective Course EGN 6933 Project in Applied Data Science
Spring	 EGN 6446 Mathematics for Data Science for Engineers II CAP 5771 Introduction to Data Science EEE 5776 Applied Machine Learning 	
Summer	 EGN 6933 Practical Work in Applied Data Science (3 credits) 	

Capstone Project

- Option 1: EGN6933 Project in Applied Data Science (3 credits or 1 course)
 - Personal passion. Some students have specific personal interests that they want to pursue on their own. As long as you can define a realistic business/organizational problem you are solving and have the necessary data to solve it, this can be a very fulfilling project.
 - Extension of current work. Many students maintain part-time jobs or find RA/OPS positions with faculty and want to leverage that work to become their Capstone. As long as there is a defined, discrete problem to be solved, this allows your capstone to enhance and support what you are already doing.
 - Something new. Many students want to do something different. Every semester, our faculty pursue possible <u>capstone</u> <u>projects with industry</u> partners and <u>faculty/researchers</u> at University of Florida. Students apply for these and get selected by those partners running the project(s).

Capstone Project

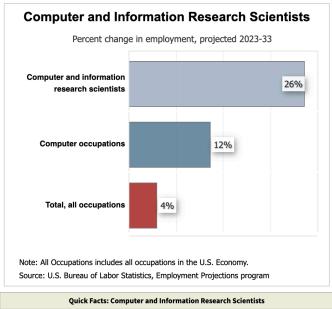
- Option 2: Integrated Process & Product Design (IPPD)
 (6 credits or 2 courses)
 - Industry-sponsored DS-based projects.
 - 2-semester commitment (IPPD 1 in Fall and IPPD 2 in subsequent Spring).
 - IPPD 1 substitutes an elective course.
 - IPPD 2 substitutes EGN6933 Project in Applied Data Science.
 - If you did not complete IPPD 1, you cannot enroll in IPPD 2.
 - Group project with other graduate students.
 - Applications for the IPPD program are due at the end of the Spring semester prior to the beginning of the capstone (e.g. April 2026 deadline for a Fall 2026 IPPD capstone start).

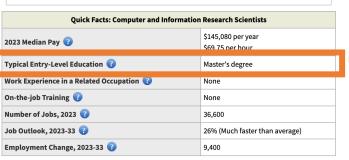
Example – Plan of Study w/ IPPD

	Year 1	Year 2
Fall	 EGN 5447 Mathematics for Data Science for Engineers EGN 5442 Programming for Applied Data Science EGS 6216 AI Ethics for Tech Leaders 	 EEE 6778 Applied Machine Learning II EGN 6933 Elective Course EGN 6933 Elective Course IPPD 1 – Capstone Project I
Spring	 EGN 6446 Mathematics for Data Science for Engineers II CAP 5771 Introduction to Data Science EEE 5776 Applied Machine Learning 	 EGN 6933 Project in Applied Data Science IPPD 2 – Capstone Project II

Program Overview M.S. in Artificial Intelligence Systems

M.S. in Artificial Intelligent Systems





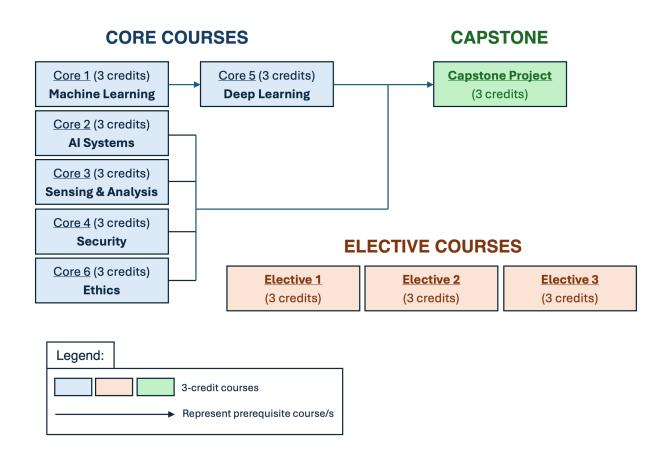
- The Master of Science (M.S.) in Artificial Intelligence Systems (MSAIS) addresses the increasing significance of artificial intelligence (AI) across diverse industries and the growing demand for skilled professionals in this field.
- Through its <u>interdisciplinary</u> approach, the program equips students with a comprehensive skillset, it merges knowledge from diverse fields such as computer science, mathematics, engineering, and ethics.
- The MS program is an <u>in-person</u>, <u>non-thesis</u> major in Artificial Intelligence Systems with a total of <u>30 credits</u> hours.

Target Audience & Industry Careers

- The program is designed for students or working professionals with a <u>B.S.</u> degree with a strong analytical and computing background.
 - Strong analytical and computing engineering majors include computer science, computer engineering, electrical engineering, and more.

• The program will train you for a wide range of industry careers including technological and IT services, healthcare, finance and banking, robotics and manufacturing, telecommunications, energy and utilities, education and research, automotive, aerospace and defense, and more.

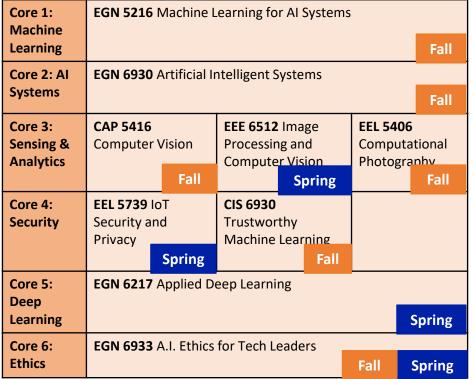
Curriculum Flowchart



Curriculum

Core Courses

(choose 1 from each core area)



Note: some courses are not available every semester, please plan your electives in advance and consult the schedule.

Elective Courses

(choose 3, at least 1 in AML-DDM and 1 in AR-HCC)

(anouse s) at least 1 m / m 2 b b m and 1 m / m mes)			
AML-DDM: Advanced Machine Learning and Data-Driven Modeling	BME 6938 Biomedical Data Science	CAP 6617 Advanced Machine Learning	EEL5840 Fundamentals of
	EEL 6814 Deep Learning	EEL 6825 Pattern Recognition and Intelligent Systems	ML, <i>or</i> STA 6703 Statistical ML
	ESI 6492 Global Optimization	EEE 6504 Machine Learning for Time Series	ESI 6355 Decision Support Systems for ISE
AR-HCC: Autonomy, Robotics, and	ABE 6005 Applied Control for Automation and Robotics	CAP 5108 Research Methods for Human Centered Computing	CEN 5726 Natural User Interaction
Human- Centered Computing			EML 6351 Adaptive Control
UT: Unrestricted Technical Electives	This group allows the students to take a technical elective course for greater curriculum flexibility. The technical elective courses in this group must be chosen in coordination with the graduate advisor to ensure prerequisite fulfillment and to optimize for achieving student career goals (e.g., courses related to entrepreneurship).		

Standard Plan of Study

	Year 1	Year 2
Fall	 Core 1: Machine Learning Core 2: Al Systems Core 3: Sensing & Analysis 	 Elective I Elective III
Spring	 Core 4: Security Core 5: Deep Learning Core 6: Ethics 	CAI 6826 Project in AI Systems

Internship & Research

- You may count <u>up to 3 credits of internship work</u> towards your degree.
 - Upon approval, a 3-credit internship would substitute a 3-credit elective course.
- You may <u>engage in research</u> in several forms:
 - As course credits, on a volunteering basis at 0-credits.
 - As a University employer, under an OPS Student Assistant or Research Assistant (RA) position¹.
- You may serve as a Teaching Assistant (TA).
 - This would not count towards your degree, but it may be valuable experience¹.

¹International students must always consult with their UF International Advisor prior to enrolling in any employment activity (paid, unpaid, volunteering, etc.).

Example – Plan of Study w/ Summer Internship

	Year 1	Year 2
Fall	 Core 1: Machine Learning Core 2: Al Systems Core 3: Sensing & Analysis 	 Elective II Elective III CAI 6826 Project in AI Systems
Spring	 Core 4: Security Core 5: Deep Learning Core 6: Ethics 	• CAI 6826Project in AI Systems
Summer	 EGN 6933 Practical Work in Al Systems 	

Capstone Project

- Option 1: CAl6826 Project in Al Systems (3 credits or 1 course)
 - Personal passion. Some students have specific personal interests that they want to pursue on their own. As long as you can define a realistic business/organizational problem you are solving and have the necessary data to solve it, this can be a very fulfilling project.
 - Extension of current work. Many students maintain part-time jobs or find RA/OPS positions with faculty and want to leverage that work to become their Capstone. As long as there is a defined, discrete problem to be solved, this allows your capstone to enhance and support what you are already doing.
 - Something new. Many students want to do something different. Every semester, our faculty pursue possible <u>capstone</u> <u>projects with industry</u> partners and <u>faculty/researchers</u> at University of Florida. Students apply for these and get selected by those partners running the project(s).

Capstone Project

- Option 2: Integrated Process & Product Design (IPPD) (6 credits or 2 courses)
 - Industry-sponsored Al-based projects.
 - 2-semester commitment (IPPD 1 in Fall and IPPD 2 in subsequent Spring).
 - IPPD 1 substitutes an elective course.
 - IPPD 2 substitutes CAI6826 Project in AI Systems.
 - If you did not complete IPPD 1, you cannot enroll in IPPD 2.
 - Group project with other graduate students.

Example – Plan of Study w/ IPPD

	Year 1	Year 2
Fall	 Core 1: Machine Learning Core 2: Al Systems Core 3: Sensing & Analysis 	 Elective II Elective III IPPD 1
Spring	 Core 4: Security Core 5: Deep Learning Core 6: Ethics 	 CAI 6826 Project in AI Systems IPPD 2

General Admission Requirements

- B.S. degree transcript.
- Cumulative B.S. GPA of 3.0 or higher (CV)
- Curriculum Vitae (CV).
 - Follow guidelines. Max 2 pages.
- Statement of purpose (SOP).
 - Follow guidelines. Max 750 words.
- Three (3) letters of recommend
- English proficiency test, if applicab
- GRE not required (nor will it be co

When drafting your CV, it is important that you highlight all your work considering its relevance for the MS program.

The Admissions Committee is working with a point system and following a rubric to review your packet. A few items in this

3. Statement of Purpose (SOP)

evaluated independently from other submitted documents. So, it is important that you write it clearly and compellingly

Our websites provide templates and guidelines for preparing your CV and SOP to ensure you stand out from the candidate pool.

Application Deadlines & Priority Dates

- We are accepting Fall 2026 applications only!
 - Domestic applicants: April 1st, 2026
 - International applicants: January 31st, 2026

- Priority Deadline: January 5th, 2026
 - Packets received by January 5th will be receive early feedback. Stay ahead of the competition, apply early!





Contact Us

- MS ADS website: <u>msads.eng.ufl.edu</u>
- MS AIS website: msais.eng.ufl.edu



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Open Floor Q&A

FAQ

FAQ

- Do the programs offer a Combination Degree (4+1 program)?
 - Currently no, but we are starting to add combination degrees options for EE, CpE, and CS majors + MS AIS. As well as BME and CHE majors + MS ADS.
- Can I transfer credits?
 - Yes, you may transfer up to 9 credits towards the M.S. program if they do not count towards your B.S. degree.
- Can I be part-time in the program?
 - Yes, the program provides you with the flexibility to pursue a job or internship.
- Are scholarships available?
 - The programs award a partial tuition waiver scholarship at a total of \$4,500 for non-Florida residents with an outstanding academic record of achievement.
- Are there TA/RA positions available?
 - Yes, you can be on a Teaching Assistantship or Research Assistantship.
 But you will generally have to seek these appointments on your own.

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ENGINEERING

Herbert Wertheim College of Engineering UNIVERSITY of FLORIDA

Electrical & Computer Engineering



Programs & Deadlines



- Master of Science (Thesis & Non-Thesis, EDGE & Campus)
- Doctor of Philosophy

Fall Admissions

- PhD Applicants December 5
- International MS Applicants January 5
- Domestic MS Applicants April 1

Spring & Summer Admissions

- Spring and summer admissions are limited to current UF undergraduates applying to the ECE MS program, applicants to the ECE MS EDGE (online) program, and funded PhD applicants.
- Spring Deadline for All *Eligible* Applicants August 1
- Summer Deadline for All Eligible Applicants January 1



Requirements



All Applicants

- Three Letters of Recommendation
- Statement of Purpose
 - PhD Students ONLY
 - Include faculty advisor of interest (up to three) and area of interest (Computer Engineering, Electronics, Electrophysics, and Signals & Systems) in your statement of purpose
- Resume/CV
- Unofficial Transcripts from All Previous College-Level Study
- Minimum Undergraduate GPA of 3.0 out of 4.0 for MS, 3.5 out of 4.0 for PhD

International Applicants

- Official IELTS or TOEFL Scores
 - TOEFL 80
 - IELTS 6.5
- Copy of Degree Certificate (If Applicable)
- Transcripts & Degree Certificate Must Be in Native Language & Official English Language
 Translation



Combined Degree (4+1) Program



What is the combined degree program?

- Opportunity to double-count up to 12 graduate credit hours for both a BS and potential MS degree
- Does NOT guarantee admission to the MS program
 - Does make the graduate application process MUCH easier
 - No SOP or LOR required for CDG students
- Does result in an overall time and cost savings if you complete the MS degree
 - Bright Futures covers graduate courses, but only at the undergraduate rate, student is responsible for the extra cost

Eligibility & Application Process



- Must have an undergraduate GPA of at least 3.3 (Strict Requirement!)
 - Applicants 3.3 to 3.59 GPA double count up to 6 credit hours
 - Applicants 3.6+ GPA double count up to 12 credit hours
- EE Students: 7 EEL-prefixed core courses, 2 EE labs
 - EEL 4744, EEE 3308C
 - 1 or 2 Breadth Courses (e.g. EEE 4773, EEL 3211C, EEL 4750, EEL 3472C, etc.)
- CPE Students: At least 7 core courses, 4 being EEL-prefixed courses
 - COP 3504 (or equivalent COP 3502 & COP 3503), COT 3100, CDA 3101, COP 3530

Application:

- Unofficial undergraduate transcripts, CV/resume
- Email the Graduate Admissions Officer at office@ece.ufl.edu. In your email include the documents listed above and the following information in the body of your email:
 - UFID, Full Name, Date of Birth, Gender, Email address

Master's Degree Requirements



- Non-thesis MS coursework requirements:
 - 30 credit hours
 - Include at least 21 credit hours of ECE, UF "classroom" courses
 - Depth requirement: Complete >= 9 credits (3 courses)
 within one division
 - Breadth requirement: Complete at least 3 credits (1 course) outside depth division





Master's Degree Requirements



- Thesis MS coursework requirements:
 - 30 credit hours
 - At least 18 hours of ECE, UF classroom courses
 - Same depth and breadth requirements
 - Must register for 3 credit hours of MS research during semester of graduation
- Thesis research (MS)
 - Three-member supervisory committee
 - Written thesis
 - Oral defense of thesis







 Graduate-level courses organized under research divisions:

Computer Engineering

- 1. Computer Architecture
- 2. Computer Systems
- 3. Hardware & Systems Security
- 4. IoT/Networking
- Communications
- 6. Controls Signals & Systems
- 7. Signal Processing
- 8. Machine Learning & Al

Electronics

- 9. RF & Power Electronics
- 10. Electronic Integrated Circuits
- 11. Nano & Quantum Devices
- 12. Microsystems Technology
- 13. E&M, Power & Optics

Electrophysics

MS Course Planner Al Assistant: https://www.ece.ufl.edu/academics/graduate/ms-assistant/



Ph.D. Degree Requirements



Research requirements:

Substantial intellectual contributions to an ECE research topic

- Ph.D. supervisory committee
 - Chair = Ph.D. Advisor
- Written Qualifying Exam
 - A survey of key literature in an ECE research topic
- Dissertation Proposal Exam (Oral + Proposal)
- Dissertation Defense (Oral + Dissertation)





Ph.D. Degree Requirements



Coursework and credit hour requirements:

- 90 credit hours beyond the BS degree
- 60 hours for student who has been awarded a MS degree (with MDA approved by Graduate School)
- 24 credit hours of engineering/science/math coursework with B or better
- Minimum of 15 hours of ECE coursework
- 6 credit hours of professional development
- Remaining credit hours may be research credits
- Advisor input on plan of coursework and study





PhD Funding Opportunities



Common Funding Support

- External Fellowship ("portable")
 - National Fellowship NSF, NASA, DoD, etc.
 - Other Fellowships professional organizations, etc.

UF Offers

- Dean's Research Assistantship (DRA): See below
- Research Assistantship (RA): Most common form of funding. Must identify a faculty advisor.
- Teaching Assistantship (TA): Very limited number of TAs available

DRA

- If you're selected to receive the DRA, you get \$35K/yr stipend + fringe benefits (@2025).
- Faculty mentor pays \$15K plus fringe, all of the tuition, after you decide.
- The DRA covers the other 20K plus fringe for 4-5years.
- Some external students may receive the SEC Deans top-off fellowship (\$5k/yr).





1 - Signals and Systems

- Studies in this field are related to the transmission, creation, manipulation, and understanding of signals and systems
- Topics include: Machine Learning and Artificial Intelligence, Control & System Theory, Signal Processing, Optics & Image Processing, Wireless Communications, Wireless Networks, Software-defined radio & RFSoC
- 16 Faculty working in this area
- Area Chair: Professor Joel Harley







NSF Center for Big Learning

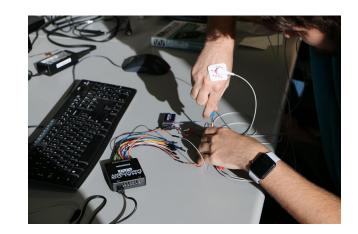






2- Electrophysics

- The Electrophysics division focuses on the behavior, fabrication, and design of semiconductor, photonics and quantum devices as well as research involving electromagnetic fields and their application.
- Topics include: Functional Materials & Integration, Micro- and Nano-scale devices, Semiconductor Devices, Photonics Devices, Quantum Devices and Technologies, Principal physics, Bio MEMS, materials, and Devices, Power Generation, Distribution and Control, Smart Power, Lightning/ Ionospheric EM



- 21 Faculty Working in this Area
- Area Chair: Professor Navid Asadi



Warren B. Nelms Institute //// for the Connected World





3. Computer Engineering

- Computer Engineering (CpE) is a discipline that embodies the science and technology of design, construction, implementation, and maintenance of software and hardware components of computer systems and computer-controlled equipment.
- Topics include: High-performance computing, Computer architecture, Communications & networking, Wireless networks, Mobile computing, Security & privacy, Parallel & distributed systems, Reconfigurable computing, Real-time and embedded systems, Robotics & machine intelligence
- 16 Faculty Working in this Area
- Area Coordinator: Professor Tuba Yavuz

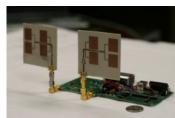


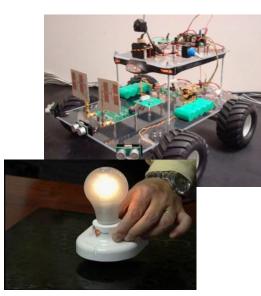


4. Electronics

- This division covers a broad range of topics from the manufacturing of integrated circuits to their applications in real world systems.
- Topics include: Adaptive circuits, RF circuits, Hardware security, VLSI design, microwave devices and interconnect modeling, IC test and modeling, bioelectronics, energy harvesting circits
- 7+ Faculty working in this Area
- Area Chair: Professor Nima Maghari







Questions?



ECE Faculty Research Al Assistant:

https://www.ece.ufl.edu/academics/graduate/faculty-research-directory/

ECE Graduate Coordinator - Dr. Tan Wong twong@ece.ufl.edu

ECE Graduate Admissions - office@ece.ufl.edu

ECE Graduate Advising – <u>gradadvising@ece.ufl.edu</u>

Herbert Wertheim College of Engineering UNIVERSITY of FLORIDA