Graduate Advising Team

Ms. Michelle T. Walker
Graduate Program Coordinator
- Main point of contact
- Reviews and receives all paperwork
- Academic Advising
- Funding Questions
- Faculty and/or student concerns
- mtwalker@ucdavis.edu

Professor Lifeng Lai
ECE Graduate Program Chair
- Approves petition to change degree objective
- Faculty and/or student concerns

Professor Weijian Yang
Graduate Advisor (PhD students)
- Academic advising for PhD students
- Faculty and/or student concerns
- Approvals
  - Remedial courses & program of study
  - Grad studies paperwork
  - ECE paperwork

Professor Sebastian Gomez-Diaz
MS Director
- Academic advising for MS students
- Faculty and/or student concerns
- Approvals:
  - Program of studies & remedial courses
  - Grad studies paperwork
  - ECE paperwork
Professor Sebastian Gomez-Diaz
MS Director

• Goal: Advise MS students so they can be successful.
• Resolve faculty and student concerns.
• Many questions/doubts could be resolved through e-mail: jsgomez@ucdavis.edu
• Administrative paperwork should be directed to Ms. Michelle Walker
  • Program of study, remedial courses, etc.
  • MS director will review and approve those at due time.
• In-person office hours are offered for MS advising:
  • Tuesdays 3:30-4:30pm
  • Appointments are required. Use: https://appointments.ucdavis.edu
Topics

- Introduction to the MS Program
- Master Program
  - Plan I – Thesis
  - Plan II – Comprehensive Exam
- ECE Resources
  - Additional information
  - Funding
Topics

• Introduction to the MS Program
• Master Program
  • Plan I – Thesis
  • Plan II – Comprehensive Exam
• ECE Resources
  • Additional information
  • Funding
Master’s Program

MS Plan I - Thesis
• Performs in-depth research and thesis writing
• More research, less courses
• 14-24 months full-time study

MS Plan II – Comprehensive Exam
• Course-based, project
• More courses, less research
• 12-20 months full-time study
Which degree objective are you planning to pursue?

You do not have to decide it now!
Research Areas

- Computer Engineering
- Information Systems
- Integrated Circuits and Systems
- Photonic and Electronic Devices
- RF-to-THz Electronics and Waves
- Bio, Ag and Health Technologies
Do you have a major Professor?

- A major Professor will guide your studies at UC Davis.
  - MS director will officially serve as your major Professor until you find one.

- A major Professor will supervise your work at UC Davis.
  - Dissertation thesis for MS plan I.
  - Capstone project for MS plan II.

- You are requested to find, contact, and identify a major Professor to work with.
  - ECE Department does not assign major Professors to students.
  - As a graduate student, it is your duty to find a major Professor.
Faculty Directory (I)

• Faculty in the Electrical and Computer Engineering Department
Faculty Directory (and II)

- Faculty in the Electrical and Computer Engineering Department
- Faculty in the Graduate Program
  - Members of other Departments, like Computer Science, Mechanical and Aerospace Engineering, Biomedical Engineering, Physics, Mathematics, etc.

**Graduate Program Faculty**

- **Ashwin Aravindakshan**
  - Associate Professor | Graduate School of Management
  - Email: aaravind@ucdavis.edu | Website: https://ashwin.faculty.ucdavis.edu/
  - Office: 3312 Gallagher

- **Matthew Bishop**
  - Professor | Computer Science
  - Email: mbishop@ucdavis.edu | Website: https://net.cs.ucdavis.edu/bishop/
  - Office: 2209 Watershed Sciences

- **Andre Daccache**
  - Assistant Professor | Biological and Agricultural Engineering
  - Email: adaccache@ucdavis.edu | Website: https://faculty.engineering.ucdavis.edu/daccache/
  - Office: 3052 Bainer

- **Cristina Davis**
  - Warren and Leta Giedt Endowed Professor and Chair | Mechanical and Aerospace Engineering
  - Email: cedavis@ucdavis.edu | Website: http://mae.engr.ucdavis.edu/faculty/davis/online/
  - Office: 2004 Bainer Hall

- **Vladimir Filkov**
  - Professor | Computer Science
  - Email: vfilkov@cs.ucdavis.edu | Website: https://web.cs.ucdavis.edu/~filkov/
  - Office: Academic Surge 207

- **Dipak Ghosal**
  - Professor | Computer Science
  - Email: dghosal@ucdavis.edu | Website: https://faculty.engineering.ucdavis.edu/ghosal/
  - Office: 3045 Kemper
How to Find a Major Professor

Seek for offered MS projects at [https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis](https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis)

Projects Offered

- Area of Research: Computer Engineering
- Area of Research: Photonic and Electronic Devices
- Area of Research: Information Systems
- Area of Research: RF-to-THz Electronics and Waves
- Area of Research: Integrated Circuits and Systems
- Area of Research: Bio Ag and Health Technologies
# How to Find a Major Professor (II)

Seek for offered MS projects at [https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis](https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis)

## Projects Offered

### Area of Research: Computer Engineering

**Project:** GPU Solvers for Flow Computation  
**Sponsors:** Professor John Owens and Postdoc Serban Porumbescu  
**Description:** We are working with the US Army Corps of Engineers to develop a GPU implementation of their "HEC-RAS" river analysis system, the leading system for flow computation. The current implementation of this package is on CPUs and we would like to bring it to GPUs. The core computation is modeling hydraulic flow on unstructured grids, and the research problems are both algorithmic and systems ones. The ideal student will be interested in writing high-quality open-source software in collaboration with fellow graduate students as well as domain experts from government. In the context of a large and active group that is interested in problems across many domains of parallel computing, it is likely that this position will be funded. It is expected that an interested student will pursue a thesis that will result in publication in a high-quality venue. This position should be equally interesting for new PhD students.  
**Requirements:** Desirable: Expertise in numerical computation and/or parallel computing. Highly desirable: C++ expertise, and even more desirable, CUDA experience. Good communicator and collaborator.  
**Link:** [https://github.com/gunrock/gunrock/projects/5](https://github.com/gunrock/gunrock/projects/5)

### Area of Research: Photonic and Electronic Devices

**Project:** MS projects in the Integrated Nanodevices & Nanosystems Laboratory  
**Sponsor:** Professor Salf Islam  
**Description:** Project opportunities include:  
1. Silicon photodiodes for 100-gigabit/sec and beyond data communication.  
2. Computational imaging with photon-trapping photodiodes.  
4. Transparent solar cells for window based on UV and IR light absorption.  
5. High-resolution time-of-flight (TOF) sensing with ultra-fast photodiodes.  
6. LIDAR: technological challenges and recent developments.  
7. Ionizing air and gases to trap COVID-19 virus and prevent airborne transmission.  
**Financial support available** for strong candidates!  
10. Memory and logic based on memristors: Simulations and design.  
**Link:** [https://www.ece.ucdavis.edu/*salf/](https://www.ece.ucdavis.edu/*salf/)
How to Find a Major Professor (III)

Seek for offered MS projects at https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis

Area of Research: RF to THz Electronics and Waves

Project: Nonreciprocal phased array antennas

Sponsors: Professor J. Sebastian Gomez-Diaz

Description: This project deals with the analysis, design, fabrication and characterization of nonreciprocal phased-array antennas able to transmit and receive RF signals with different patterns at the same operation frequency with polarization control. The project entails the design of antenna in simulation software (HFSS or CST), the use of nonlinear circuit analysis (ADS), fabrication, and measurement in an anechoic chamber.

Requirements: Knowledge of electromagnetic waves and electronic circuits. Experience with full-wave simulation software (such as HFSS/CST and ADS) would be great but it is not required. It is a project for 1-2 students.

Link: https://sites.google.com/site/josebastianogomez/

Area of Research: Bio Ag and Health Technologies

Project: Time-resolved near-Infrared spectroscopy for blood oxygenation measurement

Sponsor: Professors Weijian Yang and Soheil Ghasli

Description: Blood oxygenation is the fraction of oxygen-saturated hemoglobin relative to total hemoglobin (unsaturated + saturated) in the blood. A healthy individual regulates a very precise and specific balance of oxygen in the blood and there is medical significance to monitor oxygen saturation in patients. Near-Infrared (NIR) spectroscopy provides a noninvasive approach to conveniently measure the blood oxygenation. In this project, we will study the various approaches of NIR spectroscopy for such measurements. In particular, we will investigate and develop a time-resolved NIR spectroscopy system, which could not only provide the measurement results from the typical continuous-wave (CW) systems, but also rich information of the tissues under the measurement probe. We will develop the model, perform simulation, explore the components, build and characterize the prototype and perform in-vitro (and in-vivo) measurements.

Requirements: Electronic circuits, Basic optics, Matlab. It is a project for 2 students.
How to Find a Major Professor (IV)

Continuation of a project initiated in a graduated course

Area of Research: Integrated Circuits and Systems

Project: CMOS Analog IC design

Sponsor: Professor Stephen Lewis

Description: Continue the class project in EEC 210 or do another project related to analog CMOS integrated-circuit design.

Requirements: Receiving a B or higher in EEC 210.

Link: https://www.ece.ucdavis.edu/~lewis/
How to Find a Major Professor (and V)

Contact professors working in the research areas that you are interested in
• Include professors in the ECE Graduate Program
Contacting a Professor

Send a *concise* e-mail

- Dear Prof. XXX....
- Succinctly introduce yourself
- Highlight the projects/research lines that you are interested on
- Connect projects with your background
- Request more information / meeting

If the professor does not reply

- Send a polite reminder after ~1 week

Do NOT:

- Grammar mistakes / name misspelling
- Send a generic e-mail
- Send reminders everyday

Explore your options

- Contact several professors and learn about their research
- Financial support might be available
- Find the best fit
Questions?
Topics

• Introduction to the MS Program
• Master Program
  • Plan I – Thesis
  • Plan II – Comprehensive Exam
• ECE Resources
  • Additional information
  • Funding
Check the ECE Webpage

https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis

https://ece.ucdavis.edu/graduate/ms-degree-plan-ii-exam
Degree Requirements

**MS Plan I**
- Declare a Major Professor
- Program of Study
- Advance to Candidacy
- Thesis Committee Selection
- Thesis
- Graduate Exit Form
- Meeting with a Senior Academic Advisor

**MS Plan II**
- Declare a Major Professor
- Program of Study
- Advance to Candidacy
- Comprehensive Examination
- Graduate Exit Form
When you are ready to submit any form(s) that needs a signature from Graduate Advisor or a Graduate Coordinator please:

- Make sure you get all required signatures before sending in the form. Once signatures are complete, email form to ecegradinfo@ucdavis.edu
- Your form will be reviewed and signed by the appropriate person in the ECE department and forwarded onto Graduate Studies and your student file.
- Do NOT send the forms directly to the MS program director.
Declaring a Major Professor

- Common step for MS Plan I and II

Master's Plan I Milestones

- Submitting forms related to the M.S. Plan I Degree Requirement
- Declare a Major Professor – End of Winter Quarter - First Year

All students must select a major professor from the ECE Graduate Program directory. You must declare a major professor by completing the Declaration of a Major Professor/Co-Advisor form.

- Program of Study – End of Fall Quarter - Second Year
- Advance to Candidacy – End of Fall Quarter - Second Year
- Thesis Committee Selection – End of Fall Quarter - Second Year
- Thesis – Second Year
- Schedule an appointment with a Senior Academic Advisor in Graduate Studies – Second Year
Declaration of Major Professor/Co-Advisor

Select a Major Professor by the third quarter of enrollment in your first year.

The Major Professor (Faculty Advisor) is the primary mentor during a student’s academic career and oversees a student’s research and progress. The Graduate Council defines mentoring as a close relationship between a graduate student and a faculty member who provides guidance, support and research advising in an individualized manner.

Student Name: ___________________________ Date: ___________________________
Student ID: ___________________________ Admit Term: ___________________________

Degree Objective (check one): ☐ MS Plan I (Thesis) ☐ MS Plan II (Project) ☐ PhD

The Major Professor relationship is a mutual agreement established by the student and faculty. Please select a Major Professor from the members of the ECE Graduate Program list - https://ece.ucdavis.edu/people/associated/

<table>
<thead>
<tr>
<th>Major Professor (Print Name)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

The Co-Advisor relationship is a mutual agreement established by the student and faculty. (DUE CO-ADV 2015 RECOMMENDED)

<table>
<thead>
<tr>
<th>Co-Advisor (Print Name)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

School: ___________________________ Department: ___________________________

FOR OFFICE USE ONLY:
☐ Approved
☐ Not Approved

Graduate Advisor Signature: ___________________________ Date: ___________________________

☐ Major Professor ECEGP Member  ☐ GradShub  ☐ Grad Tracker  ☐ Faculty Emailed

Updated: July 2016

• Find the form at https://ece.ucdavis.edu/graduate/milestones
• Fill the form
• Obtain your major professor’s signature
• Send the form to ecegradinfo@ucdavis.edu
# Milestones

[https://ece.ucdavis.edu/graduate/milestones](https://ece.ucdavis.edu/graduate/milestones)

## Master's Plan I Milestones

- Submitting forms related to the M.S. Plan I Degree Requirement
- Declare a Major Professor – End of Winter Quarter - First Year
- Program of Study – End of Fall Quarter - Second Year
- Advance to Candidacy – End of Fall Quarter - Second Year
- Thesis Committee Selection – End of Fall Quarter - Second Year
- Thesis – Second Year
- Schedule an appointment with a Senior Academic Advisor in Graduate Studies – Second Year

## Master's Plan II Milestones

- Submitting forms related to the M.S. Plan II Degree Requirement
- Declare a Major Professor – End of Winter Quarter - First Year
- Program of Study – End of Fall Quarter - Second Year
- Advance to Candidacy – Program of Study Approved - Second Year
- Comprehensive Examination Application – Second Year
- Comprehensive Examination – Second Year
# Course Requirements (I)

<table>
<thead>
<tr>
<th>MS Plan I</th>
<th>MS Plan II</th>
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</thead>
<tbody>
<tr>
<td>• Course Requirements: 36 units minimum (100 and 200 series only)</td>
<td>• Course Requirements: 36 units minimum (100 and 200 series only)</td>
</tr>
<tr>
<td>• At least 16 units of graduate ECE courses</td>
<td>• At least 24 units of graduate ECE courses</td>
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<tr>
<td>• Excluding 29X and seminar series and 299.</td>
<td>• Excluding 29X and seminar series and 299.</td>
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<tr>
<td>• At most 3 units of graduate seminar</td>
<td>• At most 1 units of graduate seminar</td>
</tr>
<tr>
<td>• At most 9 units of EEC 299 research units</td>
<td>• At most 3 units of EEC 299 research units</td>
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<tr>
<td>• Additional courses might be employed</td>
<td>• Additional courses might be employed</td>
</tr>
<tr>
<td>• Undergraduate upper division and graduate courses</td>
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<tr>
<td>• ECE as well as other departments</td>
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</tr>
<tr>
<td>• Courses with grades B- or better</td>
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</tr>
<tr>
<td>• Restricted courses are not allowed</td>
<td>• Restricted courses are not allowed</td>
</tr>
</tbody>
</table>
Course Requirements (I)

IDP MS Plan I

• Course Requirements: 36 units minimum (100 and 200 series only)
• At least 12 units of graduate ECE courses
  • Excluding 29X and seminar series and 299.
• At most 3 units of graduate seminar
• At most 17 units of EEC 299 research units
• Additional courses might be employed
  • Undergraduate upper division and graduate courses
  • ECE as well as other departments
• Courses with grades B- or better
• Restricted courses are not allowed

IDP MS Plan II

• Course Requirements: 36 units minimum (100 and 200 series only)
• At least 18 units of graduate ECE courses
  • Excluding 29X and seminar series and 299.
• At most 3 units of graduate seminar
• At most 5 units of EEC 299 research units
• Additional courses might be employed
  • Undergraduate upper division and graduate courses
  • ECE as well as other departments
• Courses with grades B- or better
• Restricted courses are not allowed
## Course Schedules

### 2023-2024 Academic Year

**Course Offerings 2023-2024**

### Summer Session Schedule

<table>
<thead>
<tr>
<th>Fall 2023 Course Schedule</th>
<th>Winter 2024 Course Schedule</th>
<th>Spring 2024 Course Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEC 001</td>
<td>EEC 007</td>
<td>EEC 090</td>
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<tr>
<td>EEC 007</td>
<td>EEC 010</td>
<td>EEC 098</td>
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<tr>
<td>EEC 018</td>
<td>EEC 100</td>
<td>EEC 11A</td>
</tr>
<tr>
<td>EEC 100</td>
<td>EEC 112</td>
<td>EEC 11B</td>
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<tr>
<td>EEC 115</td>
<td>EEC 115</td>
<td>EEC 11D</td>
</tr>
<tr>
<td>EEC 124</td>
<td>EEC 124</td>
<td>EEC 11F</td>
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<tr>
<td>EEC 134</td>
<td>EEC 136</td>
<td>EEC 12G</td>
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<tr>
<td>EEC 145</td>
<td>EEC 145</td>
<td>EEC 15A</td>
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<tr>
<td>EEC 146</td>
<td>EEC 150</td>
<td>EEC 15C</td>
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<tr>
<td>EEC 151</td>
<td>EEC 157</td>
<td>EEC 15D</td>
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<tr>
<td>EEC 160</td>
<td>EEC 170</td>
<td>EEC 15G</td>
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<tr>
<td>EEC 170</td>
<td>EEC 172</td>
<td>EEC 15I</td>
</tr>
<tr>
<td>EEC 173A</td>
<td>EEC 173A</td>
<td>EEC 15K</td>
</tr>
<tr>
<td>EEC 174KY</td>
<td>EEC 175A (Previously 193AB IOT Design)</td>
<td>EEC 15L (Previously 193AB IOT Design)</td>
</tr>
<tr>
<td>EEC 175A (Previously 193AB IOT Design)</td>
<td>EEC 176A (Previously 193AB IOT Design)</td>
<td>EEC 181</td>
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<td>EEC 182</td>
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<td>EEC 183</td>
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<td>EEC 184</td>
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<td></td>
<td></td>
<td>EEC 185</td>
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</tbody>
</table>

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[https://ece.ucdavis.edu/course-schedules](https://ece.ucdavis.edu/course-schedules)
# Course Catalog

## Graduate Courses

### Disciplines Key:
- Photonics (Pho)
- Physical Electronics (PE)
- Biology, Agriculture, Health (BiA)
- Circuits (Ci)
- CSE

### Course Offerings

- **ECE 201**: Digital Signal Processing (Vin, Pho, MiE)
- **ECE 206**: Computational Methods in Biomedical Imaging (MiE, Info, Pho)
- **ECC 206**: Digital Image Processing (Info, Pho)
- **ECC 210**: Mixed Signal Circuit Design (CiR)
- **ECC 220**: Advanced Analog Circuit Design (CiR)
- **ECC 223**: Analog Mixed Signal Design for Signal Processing (Ci, Inf)
- **ECC 223**: Data-Conversion Techniques and Circuits (Ci, Inf)
- **ECC 225**: Circuits for Digital Communication (Ci, Inf)
- **ECC 226**: Low Power Digital Integrated Circuit Design (Ci, PE)
- **ECC 231**: Radio Frequency and Microwave Filter Design (RF, CMOS)
- **ECC 232**: RF/IC Design (RF, Ci)
- **ECC 232**: RF Integrated Circuits for Wireless Communications (RF, Ci, Inf)
- **ECC 234**: Nanoelectronics and Non-Macro Integrated Circuit Design (RF, Ci, Inf)
- **ECC 236**: Advanced Microwave and Antenna Design Techniques (RF, Ci)
- **ECC 240**: Electromagnetics (RF, Ci)

### Course Description

**ECC 220**: Advanced Analog Circuit Design

Prerequisites: ECE 201

**Course Description**: Analysis and design of analog MOS integrated circuits. Passive components, single-ended and fully differential op-amps, switched-data and continuous-time filters.

**Expected Course Description**: This is an advanced course in analog MOS integrated circuit design. The focus is on the design of circuits for signal processing applications. The first half of the course covers advanced MOS device modeling, passive components, and the analysis of CMOS differential amplifiers. The second half covers the design of 2-wide differential amplifiers and many-to-one mixers. The third half covers amplifier designs and the design of high-frequency filters. The last half covers advanced design techniques and noise reduction techniques and noise reduction techniques for analog MOS filters. Filter circuits are provided. Materials requiring computer simulation will be carried out by the student. One mid-term and a final will be given.

**Objectives**

- Design and analysis of op-amps using MOS transistors
- Operational amplifiers
  - The b-type op-amps
  - Current feedback op-amps
  - Current feedback op-amps
  - Current source op-amps

- Operational amplifiers
  - The b-type op-amps
  - Current feedback op-amps
  - Current feedback op-amps
  - Current source op-amps
  - Current source op-amps

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- Operational amplifiers
  - The b-type op-amps
  - Current feedback op-amps
  - Current feedback op-amps
  - Current source op-amps

- Analog Filters
  - Active filters
  - Passive filters
  - Active-passive filters
  - Active filters
  - Passive filters
  - Active-passive filters

- Continuous-Time Filters
  - RLC filters
  - RC filters
Important Advice

• Do not overload your schedule
  • Some courses could be challenging and time consuming.
  • Find a balance: graduate courses / undergraduate upper-division courses / research / TA.
  • Talk with your major professor to take EEC299 units for your research project.

• Be smart about your schedule
  • First quarter could be quite challenging – Do not take more than 1 (maximum 2) graduate courses
  • Upper division undergraduate courses count toward your program of study and MS program
    • They may be pre-requisite for graduate courses
    • Do not assume that you have the level to follow a graduate course.
  • Have a strategy: take courses that are related to your research interests.
  • Take language courses
  • Adjusting to UC Davis and the quarter system may take some time

• GPA is important
  • You must maintain an average above 3.0 to be in a good standing state
EEC200 Navigating Grad School

• Mandatory course
• Goal is to orient first-year graduate students (MS and PhD)
• Topics of the course include
  ▪ Finding a major professor
  ▪ Constructing a degree plan
  ▪ Developing effective time-management and study skills while maintaining a good work-life balance
  ▪ Learning the essential of research integrity/ethics
• Several professors will join to talk about their research lines
• This course will NOT count toward your program of studies.
Full-time student status

• All active students must enroll in at least 12 units per quarter.

• Several options to obtain units
  ▪ Graduate courses (ECE & other departments)
  ▪ Upper-division undergraduate courses (not restricted). ECE & other departments
  ▪ GSR – Research work carried out under your major professor supervision (EEC299)
  ▪ TA work – Work as a teaching assistant

• All courses count toward your full-time student status
  ▪ Not all course might count toward your Program of Study

• Advice:
  ▪ Do not take 3 graduate courses to be in full-time student status. You will likely not be successful.
  ▪ Find a balance with graduate courses, upper-division undergraduate courses, languages, courses from other departments, teaching assistant position, EEC299 research units, etc. → This will help boosting your GPA.
## Milestones

### Graduate Engineering Courses
- 16 units ECE courses

### Research Units
- EEC299 – Maximum 9 units
- Approved by your major professor

### Seminar
- EEC290 – Maximum 3 units

### Other courses
- Include upper-division undergraduate courses and graduate courses
- ECE and other departments

---

### Program of Study – Plan I

**Student Name:**

**Major Professor:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Units Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Graduate Engineering Courses</td>
<td>16</td>
</tr>
<tr>
<td>2.</td>
<td>Research (299) – at most 9 units</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Seminar (290-299, excluding 290C) – at most 3 units</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Additional courses – upper division technical or graduate courses (excluding 291X seminar series and 299)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Number of Units in Items 1-4:** 0 (16 units required)

**Do you have a B.S. in ECE?**
- [ ] Yes
- [X] No

If no, you need to complete a Remedial Course Form.

**Student Signature:**

**Date:**

**Major Professor Signature:**

**Date:**

**ECE Graduate Faculty Adviser Signature:**

**Date:**
Program of Study – Plan II

Graduate Engineering Courses
- 24 units from ECE courses

Research Units
- EEC299 – Maximum 3 units
- Approved by your major professor

Seminar
- EEC290 – Maximum 1 unit

Other courses
- Include upper-division undergraduate courses and graduate courses
- ECE and other departments
Restricted Course List for ECE Graduate Degrees

Courses required for the ECE undergraduate degree and the following courses cannot be used to satisfy the requirement for an ECE graduate degree:

- **Electrical and Computer Engineering Courses**
  - EEC 100
  - EEC 110A/B
  - EEC 130A/B
  - EEC 140A/B
  - EEC 150
  - EEC 151
  - EEC 161
  - EEC 170
  - EEC 172
  - EEC 173A
  - EEC 18 (formerly EEC 180A)
  - EEC 180 (formerly EEC 180B)
  - EEC 196

- **Computer Science Courses**
  - ECS 122A
  - ECS 150
  - ECS 188

- **Engineering Courses**
  - ENG 160
  - ENG 190

ADDITIONAL NOTES:
- ECS 154A – at most, 1 unit may be used toward graduate coursework requirements in Box 4 on the MS Program of Study
- ECS 122A – only students admitted in 2016 or earlier may use ECS 122A
- EEC 105ABC – for undergraduate sophomores and juniors only. Graduate students cannot take the course.
Remedial Courses

- Students without a B.S. in ECE
  - Meet with Academic Advisor during first quarter of residence
  - Determine if some remedial ECE courses must be taken.
  - Remedial courses DO NOT contribute to your program of studies
  - Remedial courses DO contribute to full-time student status
  - Once all remedial courses have been taken, a form must be filled and routed to the Graduate Coordinator.
  - Six courses must be selected from at least three of the six areas listed

Active and Passive Circuits
- EEC110A Electronic Circuits I
- EEC110B Electronic Circuits II

Electromagnetics
- EEC130A Introductory Electromagnetics I
- EEC130B Introductory Electromagnetics II

Physical Electronics
- EEC140A Principles of Device Physics I
- EEC140B Principles of Device Physics II

Signals and Systems
- EEC150 Introduction to Signals and Systems
- EEC151 Digital Signals and Systems

Computer Systems and Software
- ECS36A Introduction to Programming and Problem Solving
- ECS36B Introduction to Software Development and Object-Oriented Programming

Digital Systems
- EEC170 Introduction to Computer Architecture
- EEC18 Digital Systems I (formerly EEC 180A)
Academic Probation

- GPA < 3.0
- Graduate studies is notified
- Academic hold
  - You cannot register for new courses
  - Must meet with the MS Program Director to define a strategy to graduation
- You cannot TA
- You cannot graduate if you are in academic probation
Questions?
### Milestones

**Master's Plan I Milestones**
- Submitting forms related to the M.S. Plan I Degree Requirement
- Declare a Major Professor – End of Winter Quarter - First Year
- Program of Study – End of Fall Quarter - Second Year
- Advance to Candidacy – End of Fall Quarter - Second Year
- Thesis Committee Selection – End of Fall Quarter - Second Year
- Thesis – Second Year
- Schedule an appointment with a Senior Academic Advisor in Graduate Studies – Second Year

**Master's Plan II Milestones**
- Submitting forms related to the M.S. Plan II Degree Requirement
- Declare a Major Professor – End of Winter Quarter - First Year
- Program of Study – End of Fall Quarter - Second Year
- Advance to Candidacy – Program of Study Approved - Second Year
- Comprehensive Examination Application – Second Year
- Comprehensive Examination – Second Year

[https://ece.ucdavis.edu/graduate/milestones](https://ece.ucdavis.edu/graduate/milestones)
Eligibility

• Maintain 3.0 GPA in all coursework listed on the Program of Study
• Program of Study is approved
Candidacy MS Plan I

Candidacy for the Degree of Master of Science or Arts

Plan I – Thesis Plan

INSTRUCTIONS TO APPLICANT
Please complete both pages, secure appropriate departmental approvals, pay the candidacy fee to the Cashier’s Office, and file this form with Graduate Studies. Please consult Graduate Studies and your graduate program for filing deadlines.

NOTE: $15 Candidacy Fee must be paid at Cashier’s Office before this form is presented to Graduate Studies. Fee subject to change without notice.

Last Name: ___________________________ First Name: ___________________________
Middle Name: ________________________ Student ID Number: ___________________

Current Address: ___________________________ City: ___________________________
State/Zip Code: ___________ Telephone Number: ___________

Degree Sequence Number: ___________________ Graduate Program Code: ___________
Program Code: ___________ E-mail: ___________________________

All requirements, including thesis to be completed by: (fill in one)
June 20 ________ September 20 ________ December 20 ________ March 20 ________

Applicant Signature: ___________________ Date: ___________

Master’s Thesis Committee Members: All committee members listed, including an optional fourth reader, once approved by the Dean of Graduate Studies, must approve the final version of the thesis and sign the title page. A change to committee membership requires submission of a Petition for Reconstitution of Committee Membership prior to submission of the thesis to Graduate Studies.

Name (First, Middle Initial, Last) ___________________ Academic Title (Prof., Assoc. Prof., etc.) ___________________
Department: ___________________

(Optional 4th Committee Member)

DEPARTMENT APPROVAL
Graduate Advisor Signature: ___________________ Date: ___________
Printed Name: ___________________________

Thesis Chair Signature: ___________________ Date: ___________
Printed Name: ___________________________

Graduate Coordinator Signature: ___________________ Date: ___________
Printed Name: ___________________________

Graduate Studies Website: Graduate Forms

LIST ONLY COURSES RELEVANT TO DEGREE

<table>
<thead>
<tr>
<th>Upper Division Courses completed or to be completed (thesis required only)</th>
<th>Leave Blank</th>
<th>Units</th>
<th>Quarter and Year Taken</th>
<th>Institution</th>
<th>Instructor</th>
</tr>
</thead>
</table>

Graduate level courses completed or to be completed (thesis required only)

Graduate Studies use only:
TOTAL UNITS LISTED

GRADUATE STUDIES SECTION
Matriculation: ___________ Fee Paid: ___________ Thesis Filed: ___________
Full Time: ___________ Grad/Res: ___________ Degree Confirmed: ___________
G.P.A.: ___________ Registered/Filing Fee: ___________ at time of submission
Deadlines: ___________
ETD Number: ___________ Embargo: ___________ Copyright: □ Yes □ No

APPROVED
Dean of Graduate Studies Signature: ___________________ Date: ___________
Staff Initials: ___________________
Candidacy for the Degree of Master of:
- Advanced Study
- Arts
- Engineering
- Law
- Professional Accountancy
- Public Health
- Science

Plan II – Comprehensive Exam Plan

INSTRUCTIONS TO APPLICANT
Please complete both pages, secure appropriate departmental approvals, and file this form with Graduate Studies. Please consult Graduate Studies and your graduate program for filing deadlines.

NOTE: $55 Candidacy Fee must be paid at Cashier’s Office before this form is presented to Graduate Studies. Fee subject to change without notice.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Middle Name</th>
<th>Student ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Address</th>
<th>City</th>
<th>State/Zip Code</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degree Sequence Number</th>
<th>Graduate Program</th>
<th>Program Code</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

All requirements including comprehensive examination to be completed by: (Fill in one):
- June 20___
- September 20___
- December 20___
- March 20___

Applicant Signature: ___________________________ Date: ____________

DEPARTMENT APPROVAL

Graduate Program Advisor’s Signature: ___________________________ Date: ____________
Print Name: ___________________________

Graduate Program Coordinator’s Signature: ___________________________ Date: ____________
Print Name: ___________________________

LIST ONLY COURSES RELEVANT TO DEGREE

<table>
<thead>
<tr>
<th>Upper Division courses completed or to be completed for the Master’s degree</th>
<th>Units</th>
<th>Quarter and Year taken</th>
<th>Institution</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Graduate Studies use only:

TOTAL UNITS LISTED

GRADUATE STUDIES SECTION

Matriculation: ___________________________ Fee Paid: ___________________________ Comp Exam Date: ___________________________
Full Time: ___________________________ Credits: ___________________________ Degree Conferral Date: ___________________________
G.P.A.: ___________________________ Registered/Filing Fee: ___________________________ (date of submission)
Deficiencies: ___________________________

APPROVED

Dean of Graduate Studies Signature: ___________________________ Date: ____________
Staff Initial: ____________

Rev. 10/17
This version supersedes any earlier version.
Candidacy Payment

Graduate Forms

- Candidacy for the Doctoral Degree (Plan A, B, or C): $90.00
- Candidacy for the Master's Degree (Plan I or II): $55.00
- Filing Fee Application: $162.00
- Readmission Application: $70.00
Selecting Your Committee Members

- Coordinate with your major professor to make your selection
- Visit the ECE Directory for ECEGP members
  - The majority of your members must be from the ECEGP list
  - Faculty listed by Research area Faculty & Research
- External Membership
  - External Membership Application
  - CV of the member you are requesting to be member of your committee
Milestones

**Master of Science Plan I**
**Thesis Committee Application**

Complete and return to the Graduate Program Coordinator in Electrical and Computer Engineering office as soon as you have chosen your thesis committee.

- 3 Committee Members
  - Chair = Major Professor
  - 2 of 3 must be ECE GP Members

<table>
<thead>
<tr>
<th>Student Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID:</td>
</tr>
<tr>
<td>Thesis Title:</td>
</tr>
</tbody>
</table>

**Committee Members**

<table>
<thead>
<tr>
<th>Chair Print Name</th>
<th>Chair Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Member Print Name</th>
<th>Signature</th>
</tr>
</thead>
</table>

**Master of Science Plan II**
**Comprehensive Exam Application**

Complete and return to the Graduate Program Coordinator in Electrical and Computer Engineering office as soon as you have chosen your thesis committee.

- 2 Committee Members
  - Chair = Major Professor
  - ECE GP Faculty Member
- Include a copy of your approved MS Plan II Program of Study

<table>
<thead>
<tr>
<th>Student Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID:</td>
</tr>
<tr>
<td>Seminar Topic:</td>
</tr>
<tr>
<td>Proposed Date/Time:</td>
</tr>
</tbody>
</table>

**Committee Members**

<table>
<thead>
<tr>
<th>Chair Print Name</th>
<th>Chair’s Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Member Print Name</th>
<th>Member’s Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Member Print Name</th>
<th>Signature</th>
</tr>
</thead>
</table>
MS Plan I - Graduation

Thesis

- Thesis Committee
- Submit electronically using ProQuest and Title Page is signed
- Graduate Exit Form
- Presentation is not required

Master's Plan I Milestones

- Thesis Committee Selection – End of Fall Quarter - Second Year
  - Submit the M.S. Thesis Committee application. The responsibility of this committee is to assist in the guidance of the student and to read and approve the thesis.
  - Chaired by the major professor and made up of two other members
  - The majority of this committee must be members of the ECE Graduate Program
  - External Membership Application - For members outside of the UC System

- Thesis – Second Year
  - Master's Candidate Degree Completion List
  - Preparing and Filing Your Thesis or Dissertation
  - Dissertation submitted electronically
  - Check filing deadlines on the Academic Calendar

- Schedule an appointment with a Senior Academic Advisor in Graduate Studies – Second Year
  - Take the following documents to Graduate Studies
  - Graduate Exit Form - Submit to the Graduate Program Coordinator for signature
  - Thesis/Dissertation Copyright and Embargo Agreement
  - One title page with original signatures in ink
  - Make an appointment with a Senior Academic Advisor. Be prepared to spend 10 - 15 minutes with Graduate Studies.

https://ece.ucdavis.edu/graduate/milestones
Master’s Plan II
Graduation

- Main professor + 1 committee members
- Written report
  - Brief description of the project
- Poster/Oral presentation
  - 15~20 minutes
MS Plan II Route: Comprehensive exam vs Paper critique route

Comprehensive exam
- Written report
- Oral presentation

Paper critique route
- MS director is the Major Professor
  - Rare option for exceptional cases
  - Discuss your case with the MS director
- Critique of a paper
  - Specific to your research area
  - Paper database provided by ECE faculty
  - Evaluation by ECE faculty + MS director
  - Poster/oral presentation
Preparing for Graduation
Thesis/Dissertation/Final Reports Graduation Filing Deadlines

Use the table below to help you decide when to submit your thesis/dissertation/ masters report for graduation. Review the Filing Your Thesis or Dissertation webpage for information about the filing process, formatting, and paperwork.

Master Report forms, dissertation, required filing paperwork, and signed title page must be submitted to Graduate Studies by 11:59 PM on the deadline.

<table>
<thead>
<tr>
<th>Submission Deadline</th>
<th>Degree Awarded Date</th>
<th>Last Qtr in a Student Status (Enrolled or on Filing Fee):</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 8, 2023</td>
<td>September 15, 2023 (Summer)</td>
<td>Enrolled or on Filing Fee in Spring 2023</td>
</tr>
<tr>
<td>December 8, 2023</td>
<td>December 15, 2023 (Fall)</td>
<td>Enrolled or on Filing Fee in Fall 2023</td>
</tr>
<tr>
<td>March 15, 2024</td>
<td>March 22, 2024 (Winter)</td>
<td>Enrolled in Winter 2024</td>
</tr>
<tr>
<td>June 6, 2024</td>
<td>June 13, 2024 (Spring)</td>
<td>Enrolled or on Filing Fee in Spring 2024</td>
</tr>
</tbody>
</table>
Graduation Documents

Thesis

- Preparing and Filing Your Thesis or Dissertation
  1. Title Page
  2. Copy of your abstract
  3. Copyright/Embargo Agreement
  4. Graduate Exit Form
  5. Meet with a Senior Academic Advisor

Comprehensive Exam/Paper Critique

- Schedule your exam
  1. Verification of Completion of the Comprehensive Exam
  2. Master’s Report Form
  3. Written report in IEEE format
  4. Graduate Exit Form
Master’s Candidate Degree Completion List

All theses must be submitted electronically using the ProQuest Electronic Thesis/Dissertation (ETD) Administrator. You must submit the finalized version of the thesis. Forms and formatting information can be found on the Office of Graduate Studies website at http://graduates.ucdavis.edu/current-students/admissions-academic-services/filing-thesis-or-dissertation. Published deadlines for turning in the thesis will be strictly observed. If you miss the deadline you will be placed on the next degree list.

DOUBLE CHECK:

Are you currently registered or on Filing Fee status? Is your Filing Fee status current? If your status has lapsed, you will need to consult with your Graduate Coordinator as to your next step.

Have you made any changes to your thesis committee since you advanced to candidacy? If so, have you submitted a Request for Reconstitution of Committee? http://graduates.ucdavis.edu/sites/default/files/UploadFiles/current-students/131-recon-committee-membership/request.pdf

Have you checked to ensure that your name is correct as it appears on the Student Information System? If your name is incorrect, or you wish to include or exclude middle name and/or initial, or your name has a character such as an accented mark, please complete a Name Change petition with the Office of the University Registrar.

Have all “I” Incomplete Grades and “NG” No Grades been completed?

Have all course requirements been completed?

THESIS OPTION

Your thesis must have been submitted electronically to the PQUL ETD website at least two business days prior to your appointment with Graduate Studies. Graduate Studies must have approved the electronic thesis prior to your appointment.

PLEASE BE SURE TO FOLLOW THE FOLLOWING WITH YOU TO YOUR APPOINTMENT:

One title page with original signatures in ink. Faculty names must be typed beneath the signature line.

Sample and Template title pages are located here: https://grad.ucdavis.edu/academic-affairs/filing-your-degree/filing-thesis-or-dissertation

One copy of your abstract.

Copyright/Embargo Agreement: https://grad.ucdavis.edu/sites/default/files/UploadFiles/current-students/131-copyright-embargo-agreement.pdf

You must sign on the Student’s Signature line in the Embargo section

Embargo section must be signed by Major Professor even if you select “No Embargo”

Copyright section should be signed only if you register your thesis/dissertation through ProQuest during upload

Graduate Program Exit form – this form must be printed off, signed by your Graduate Coordinator, and presented at the time you meet with Graduate Studies staff http://grad.ucdavis.edu/sites/default/files/UploadFiles/current-students/131-graduate-program-exit.pdf

EXAM OPTION

Have you taken and passed your comprehensive exam by the appropriate date? M.P.A. students will use a form specifically for M.P.A. programs: http://graduates.ucdavis.edu/current-students/admissions-academic-services/form-information

Graduate Program Exit form – this form must be printed off, signed by your Graduate Coordinator, and forwarded to Graduate Studies staff: http://grad.ucdavis.edu/sites/default/files/UploadFiles/current-students/131-graduate-program-exit.pdf

Note: This form does NOT go to the Office of Graduate Studies. The form is for your information only.

Rev. 12/19 This version supersedes all earlier versions.
Student Assessment Report (SPA)

1. A survey to keep track of students’ performance and collaboration with Professors
   • Help identifying potential challenges
2. Student completes the SPA
3. Major Professor reviews and finalizes the SPA
4. MS Program Director approves
   • Courses
   • Degree Progress
   • Committee Members
   • Accomplishments and Expectations
   • Career Goals
   • Overall Assessment (Completed by major professor)
     • Satisfactory
     • Marginal
     • Unsatisfactory
Tips: Student Assessment Report

- Be specific
- Understand the degree requirements
- Have personal expectations, set clear goals
- Communicate with your major professor
  - Goals/Expectations
  - Degree requirements
  - Accomplishments
  - Graduation date
Questions?
Topics

• Introduction to the MS Program
• Master Program
  • Plan I – Thesis
  • Plan II – Comprehensive Exam

• ECE Resources
  • Additional information
  • Funding
Student Status

**Full-time** – All active student must enroll in at least 12 units

**Part-time** – Submit a Part-time Petition Webform by the 10th day of instruction
- F-1 or J1 status cannot drop below 12 units without SISS authorization
- Register for 6 units or less

**Planned Educational Leave Program**
- PELP up to a year
- Email Graduate Program Coordinator for PELP application
- International students must return to their home country

**In-Absentia** - In absentia is a reduced-fee registration status for full-time, regularly enrolled students who have an academic need to conduct research or study outside of the state of California for a period of one academic year.

**Filing Fee**
- Must have Advanced to Candidacy (program of studies approved)
- Research project should be have completed, except cosmetic edits
Degree Changes

**Petition for Degree Objective Change**

- Change major (connect with advisor in new major)
- Change degree objective
- Double major
- Complete the Petition to Change Graduate Major, Degree Objective, or Double Graduate Major
Petition to Transfer Coursework
You may transfer coursework from another university as long as the course was not required for your undergraduate degree objective

- Coursework must be approved by Graduate Faculty Advisor
- Submit syllabus for the course
- Must have a letter that confirms the course was not required for your undergraduate degree

Transfer Quick-Reference

<table>
<thead>
<tr>
<th>Source of Transfer Coursework</th>
<th>Student Standing During Course(s)</th>
<th>Transfer Units/Courses Permitted</th>
<th>Transfer Course Level</th>
<th>Units Transferred</th>
<th>GPA Transferred</th>
<th>Residence Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Another UC Campus (not a UC Extension)</td>
<td>Graduate</td>
<td>Up to 50% of units required for the UC Davis master's degree</td>
<td>Upper-division or Graduate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>A Non-UC Campus</td>
<td>Graduate</td>
<td>Up to two courses (no unit max)</td>
<td>Upper-division or Graduate</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>UC Davis Extension</td>
<td>Postbac (after undergrad but before grad)</td>
<td>Up to 12 quarter units</td>
<td>Upper-division or Graduate</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>UC Davis Summer Session</td>
<td>Postbac (after undergrad but before grad)</td>
<td>Up to two courses (no unit max)</td>
<td>Upper-division or Graduate</td>
<td>Yes</td>
<td>By Request</td>
<td>No</td>
</tr>
<tr>
<td>Undergraduate (any Institution)</td>
<td>Undergraduate</td>
<td>Up to two courses (no unit max)</td>
<td>Graduate Only</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Funding Information

Master’s students are self-funded
• You are supposed to cover your tuition fees

Potential funding sources
• Teaching assistant (TA) appointment
• GSR might be available
  • Professors may have funded projects available
  • Funding may vary
• FAFSA (Domestic Students) – Free Application for Federal Student Aid
## Teaching Assistant Positions (I)

**Teaching Assistants** - TA appointment

- You work as a support teacher in an undergraduate or graduate courses ECE and other departments
- You will receive an e-mail every quarter with a list of TAs positions. You should apply if you are interested.

### Eligibility

- Full-time status
- Good academic standing (3.0 GPA minimum)
- Complete EEC 390
- Language Proficiency

### EEC390 is Mandatory

- Register as soon as possible
- Only available in the Fall
- 2-day course
- Does not count toward your program of study.

### If you are working as a TA...

- Enroll in EEC396 to get units (1 to 4) to satisfy full-time student status requirements.
- These units cannot be employed in your program of study.
Teaching Assistant Positions (and II)

https://ece.ucdavis.edu/graduate/teaching-assistants
Employment Eligibility & Work Study

Employment
• 3.0 minimum GPA
• Full-time status a 12 units for the quarter
• 50% total appointment maximum during the academic year
• GSR Appointment – 21 academic quarters max

Note: Must file a Petition for Exception to Policy (to the Dean of Graduate Studies) if any of these criteria are not met during a given quarter

Work Study
• Must be a Domestic Student (US citizen/permanent resident)
• FAFSA Required each year by June 30th
• Must demonstrate Financial Need
• Must have at least a 25% GSR Appointment with a faculty Research Advisor
Thank you!!

Resources:

• Milestones - https://ece.ucdavis.edu/graduate/milestones
• Schedules and Classes - https://ece.ucdavis.edu/schedules-classes
• MS Plan I Degree Requirements - https://ece.ucdavis.edu/graduate/ms-degree-plan-i-thesis
• MS Plan II Degree Requirements - https://ece.ucdavis.edu/graduate/ms-degree-plan-ii-exam
• Faculty & Research - https://ece.ucdavis.edu/faculty-research
• Faculty Directory - https://ece.ucdavis.edu/directory
• Graduate Studies Forms - https://grad.ucdavis.edu/financial-support/forms
  • Preparing & Filing Your Thesis or Dissertation
  • Master’s Exam or Project Filing Requirements
  • Academic Calendar
  • Form Store – Electronic payments
Questions?