

# Guidelines for Course Selection for M.S. Students in the Electrical & Computer Engineering Department

Depth Area	Undergraduate Preparation	Core Course Plan A (Thesis)	Core Course(s) Plan B (Project)	Depth Courses
<b>Communication Systems</b>	EE 458: Analog Communication	EE 602: Stochastic Systems	EE 602: Stochastic Systems	EE 558: Digital Communication EE 641: RF Wireless Systems EE 650: Modern Comm Thy EE 652: Prin & Apps of Info Thy EE 653: Coding Theory
<b>Electromagnetic Systems</b>	EE 440: Electromagnetic Waves	EE 602: Stochastic Systems	EE 540: Microwave Design EE 602: Stochastic Systems	EE 534: Solid State Devices EE 540: Microwave Design EE 631: RF Electronic Ckts EE 634: RF Circuit Design EE 641: RF Wireless Systems EE 645: Antennas & Propagation EE 674: Sig. and Power Integrity
<b>Computer Networks</b>	EE 410: Signals and Systems	EE 602: Stochastic Systems	EE 602: Stochastic Systems CompE 560: Computer & Data Networks	CompE 560: Computer & Data Networks CompE 565: Multimedia Comm EE 660: High Speed Nets EE 662: Wireless Sensor Nets EE 665: Multimedia Networks
<b>Signal Processing</b>	EE 410: Signals and Systems	EE 602: Stochastic Systems	EE 601: Linear System Theory EE 602: Stochastic Systems	CompE 565: Multimedia Comm EE 556: Digital Signal Proc EE 654: Adaptive Algorithms EE 657: Digital Image Proc EE 658: Advanced DSP
<b>VLSI Systems</b>	CompE 470: Digital Circuits	EE 602: Stochastic Systems	EE 602: Stochastic Systems CompE 572: VLSI Ckt Design	CompE 572: VLSI Ckt Design EE 530: Analog Integ. Ckt Design EE 600: VLSI Testing EE 634: RF Circuit Design EE 670: ASIC Design EE 672: VLSI System Design EE 674: Sig. and Power Integrity
<b>Embedded Systems</b>	EE 410: Signals and Systems CompE 475: Microprocessors	EE 602: Stochastic Systems	EE 602: Stochastic Systems	CompE 561: Database & Web Program. CompE 571: Embedded Operating Sys. EE 522: Digital Control Systems EE 556: Digital Signal Proc EE 662: Wireless Sensor Nets EE 672: VLSI System Design
<b>Energy Systems and Control</b>	EE 480: Power Systems EE 420: Feedback Control Systems	EE 601: Linear System Theory	EE 601: Linear System Theory	EE 522: Digital Control Systems EE 581: Power Systems Dynamics EE 584: Power Electronics EE 596: Renewable Energy Systems EE 600: Advanced Power Electronics

## Instructions

These guidelines provide a roadmap for students in either Plan A or Plan B. Before meeting with the ECE Department Graduate Advisor, a classified student should prepare a Program of Study using these guidelines in selecting the courses to be declared for the degree program. The Program of Study, which must be submitted to the ECE Department Office by the end of the first semester or before completing nine units of graduate work, should follow the guidelines given below:

### General Comments

- Core courses must be taken in the first year of the program.
- No more than four (4) 500 level courses are accepted for the graduate program.
- Other courses may also be taken for credit under the depth area, subject to the approval of the Graduate Advisor.
- Plan A students are allowed to take one course from outside the ECE Department, with the approval of their thesis advisor and the Graduate Advisor.
- Plan B students are **NOT** allowed to take courses from outside the ECE Department.
- All students **MUST** choose Plan A (Thesis). Under the following circumstances, students can choose Plan B (Project):
  - They are already in Plan A but for some compelling reasons they cannot continue under Plan A. The thesis advisor will decide whether a student can switch to Plan B or not, by consulting with the Graduate Advisor.
  - They cannot find a professor who is willing to advise them. In this case, students **MUST** get the signature of three professors including all professors in their declared area of specialization indicating that they are not available or willing to advise the student (Declaration of Unavailability to Advise Thesis).
- Plan B students **MUST** take EE798 (Project) under the supervision of a professor as the project advisor. The project will be evaluated and approved by two professors including the project advisor in a 30 minute presentation session.
- Plan B students can enroll in the project (EE798) only after completing 21 units and having a POS on file.
- EE797 and EE799A&B cannot be used in Plan B. If students switch from Plan A to Plan B, they need to remove EE797 and EE799A&B from their POS and take 6 units of regular courses and 3 units of EE798, with the approval of the Graduate Advisor.
- Only students in Plan A (Thesis) can use CPT.

***Plan A Students: Total of 30 units***

- Declare a depth area.
- Take four (4) courses in the depth area including the core course. **(12 units)**.
- Take two breadth courses: **(6 units)**.
- Take one course either from the depth area or as a breadth course. **(3 units)**.
- Register for six units of EE797 (research) and three units of EE799A (thesis): **(9 units)**.
- Credit is not given for EE798 for Plan A students.

***Plan B Students: Total of 30 units***

- Declare a depth area.
- Submit the Declaration of Unavailability to Advise Thesis (DUAT) form signed by three professors in the declared area or the consent of the thesis advisor.
- Take six (6) courses in the depth area including the core course(s). **(18 units)**.
- Take three breadth courses: **(9 units)**.
- Take EE798 (Project) advised by one professor. **(3 units)**.

All courses and depth areas listed are subject to the State of California and university funding and therefore may not always be available. Please contact the ECE Department for more information.

## **List of the Professors in Each Area of Specialization**

**Communication Systems:** Dr. Madhu Gupta, Dr. Santosh Nagaraj, Dr. Duy Nguyen

**Electromagnetic Systems:** Dr. Madhu Gupta, Dr. Ege Engin, Dr. Satish Sharma

**Computer Networks:** Dr. Sunil Kumar, Dr. Yusuf Ozturk, Dr. Mahasweta Sarkar

**Signal Processing:** Dr. Ashkan Ashrafi, Dr. Sunil Kumar

**VLSI Systems:** Dr. Amir Alimohammad, Dr. Ege Engin, Dr. Ke Huang, Dr. Ying-Khai Teh

**Embedded Systems:** Dr. Baris Aksanli, Dr. Yusuf Ozturk, Dr. Hakan Toreyin

**Energy Systems and Control:** Dr. Chris Mi, Dr. Reza Sabzehgar, Dr. Sridhar Seshagiri, Dr. Lal Tummala

## Graduate Courses Tentatively Offered in Fall and Spring Semesters

***IMPORTANT NOTE:*** This is just a tentative schedule and is intended to help students plan their Program of Study ahead of time. The courses and the semesters are subject to change without prior notice. **Offering of the courses is also contingent upon the availability of the instructors.**

<b>Fall Semesters</b>		<b>Spring Semesters</b>	
EE502	Electronic Devices Rehab	EE534	Solid State Devices
EE503	Biomedical Instrumentation	EE530	Analog Integrated Circuit Design
EE522	Digital Control Systems	EE540	Microwave Devices and Systems
EE540	Microwave Devices and Systems	EE556	Digital Signal Processing
EE556	Digital Signal Processing	EE581	Power System Dynamics
EE558	Digital Communications	EE600	Advanced Power Electronics
EE584	Power Electronics	EE600	Digital ASIC Design
EE596	Renewable Energy Smart Grid	EE600	VLSI Testing
EE601	Linear Sys Theory & Design	EE602	Stochastic Signals & Systems
EE602	Stochastic Signals & Systems	EE634	RF Circuit Design
EE631	RF Electronics Circuits	EE641	RF Wireless Systems
EE645	Antennas and Propagation	EE650	Modern Communication Theory I
EE654	Adaptive Algorithms	EE652	Principles & App of Information Theory
EE657	Digital Image Processing	EE653	Coding Theory
EE662	Wireless Sensor Networks	EE658	Advanced Digital Signal Process
EE672	VLSI System Design	EE660	High Speed Net Design
EE674	Signal and Power Integrity	EE665	Multimedia Wireless Networks
COMPE560	Computer and Data Networks	EE685	MEMS Design and Applications
COMPE565	Multimedia Communication Systems	COMPE560	Computer and Data Networks
COMPE572	VLSI Circuit Design	COMPE561	Database and Web Programming
COMPE571	Embedded Operating System	COMPE565	Multimedia Communication Systems