

Guidelines for Course Selection for M.S. Students in the Computer Engineering (CompE) Degree Program

Area of Specialization	Core Course(s)	Suggested Depth Area Courses	Preferred Undergrad Preparatory Course(s)
Computer Networks	CompE 560: Computer Networks OR EE 602: Stochastic Systems OR EE 603: Engineering Optimization	CompE 561: Database and Web Programming CompE 565: Multimedia Comm CompE 596: Machine Learning for Engineering EE 660: High Speed Nets EE 662: Wireless Sensor Nets EE 665: Multimedia Networks	EE 410: Signals and Systems
Embedded Systems	CompE 571: Embedded Operating Systems	CompE 561: Database & Web Program CompE 570: VLSI System Design CompE 596: Machine Learning for Engineering EE 522: Digital Control Sys EE 662: Wireless Sensor Nets	CompE 475: Microprocessor EE 410: Signals and Systems
Machine Learning and Scientific Computing	CompE 596: Machine Learning for Engineering	CompE 560: Computer Networks CompE 596: Accelerated Computing CompE 596: Cyber-physical Systems EE 596: Neuromorphic Computing EE 602: Stochastic Systems	CompE 260: Data Structures Math 254: Discrete Math
VLSI Systems	CompE 572: VLSI Circuit Design	CompE 570: VLSI System Design EE 530: Analog Integrated Circuit Design EE 634: RF Circuit Design EE 670: ASIC Design EE 671: VLSI Testing EE 674: Sig. and Power Integrity	CompE 470: Digital Circuits

Instructions

These guidelines provide a roadmap for students in either Plan A or Plan B. Before meeting with the Graduate Advisor, a student should prepare a Program of Study (POS) using the guidelines given below in selecting the courses to be declared for the degree program:

General Comments

- You are encouraged to take the core course in the first semester of the program.
- Four 500-level courses are accepted for the graduate program. Talk to the Graduate Advisor if you are having issues finding relevant 600-level courses.
- Plan A students will mutually select a faculty member to serve as the Thesis Advisor. Students must take 6 units of 799 and 3 units of 799A under the supervision of the Thesis Advisor. Rules, guidelines and required paperwork are described on our [website](#). Please read it thoroughly. Also, check with the [College of Graduate Studies](#) for deadlines to submit your master's thesis. Please make sure that your POS is on file.
- Plan B students must take 798 (Project) under the supervision of a faculty member who will serve as the Project Advisor. Rules, guidelines and required paperwork are described on our [website](#). Please read it thoroughly. Also, check with the [College of Graduate Studies](#) for deadlines to submit your Project report. Please make sure that your POS is on file.
- Students are allowed to take two courses from outside the ECE Department, with the approval of their Thesis or Project Advisor and the Graduate Advisor. If students change Thesis or Project Advisor, these non-ECE courses may not be used as part of their Program of Study (POS).
- Plan A students are encouraged to enroll in the thesis (797) after completing 9 units (as early as the second semester). Please engage with Professors during your first semester to identify your Thesis Advisor.
- Plan B students are encouraged to enroll in the project (798) after completing 21 units (as early as the third semester) but no later than after completing 27 units.
- If a student switches from Plan A to Plan B, he/she needs to remove 797 and 799A&B from their POS and take 6 units of regular courses and 3 units of 798, with the approval of the Project Advisor and the Graduate Advisor.
- International students may exercise their CPT after completing 18 units. Students need to maintain a GPA of 3.0 or better to qualify for the CPT. They cannot work for more than 20 hours per week in a semester in which they have classes, and the location of their work must be within the driving distance of SDSU.
- Please refer to this [website](#) for detailed instructions on graduation requirements for both Plan A and Plan B. Pay special attention to the section that describes how to obtain the course number 799A (<https://electrical.sdsu.edu/graduate/thesis-project-proc>)

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 797 (research) and three units of 799A (thesis): **(9 units)**.
- Credit is not given for 798 for Plan A students.
- Submit the POS to the department signed by the Thesis Advisor before you defend your thesis.
- The department allows flexibility in choosing your breadth/depth courses – please talk to your Thesis Advisor and/or Graduate Advisor if in doubt.

Plan B Students: Total of 30 units

- Declare a depth area.
- Take six (6) courses in the depth area including the core course(s). **(18 units)**.
- Take three breadth courses: **(9 units)**.
- Take 798 (Project) advised by the project advisor. **(3 units)**.
- Submit the POS to the department signed by the Project Advisor before you defend your project.
- The department allows flexibility in choosing your breadth/depth courses – please talk to your Project Advisor and/or Graduate Advisor if in doubt.

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. Santosh Nagaraj, Dr. Duy Nguyen

Computer Networks: Dr. Sunil Kumar, Dr. Yusuf Ozturk, Dr. Christopher Paolini, Dr. Mahasweta Sarkar, Dr. Junfei Xie

Electromagnetic Systems: Dr. Ege Engin, Dr. Satish Sharma

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

Energy Systems and Control: Dr. Chris Mi, Dr. Reza Sabzehgar, Dr. Saeed Manshadi, Dr. Sridhar Seshagiri, Dr. Tong Huang

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

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

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.

Fall Semesters		Spring Semesters	
EE503	Biomedical Instrumentation	EE522	Digital Control Systems
EE540	Microwave Devices and Systems	EE540	Microwave Devices and Systems
EE558	Digital Communications	EE558	Digital Communications
EE584	Power Electronics	EE581	Power System Dynamics
EE596	Renewable Energy Smart Grid	EE596	Neuromorphic Computing
EE601	Linear Sys Theory & Design	EE602	Stochastic Signals & Systems
EE602	Stochastic Signals & Systems	EE634	RF Circuit Design
EE603	Engineering Optimization	EE641	RF Wireless System
EE645	Antennas and Propagation	EE652	Principles & App of Information Theory
EE650	Modern Communication Theory	EE658	Advanced Digital Signal Process
EE 654	Adaptive Filter Design	EE665	Multimedia Wireless Networks
EE662	Wireless Sensor Networks	EE740	Advanced topics in physical electronics
EE674	Signal and Power Integrity	EE684	Advanced Power Electronics
COMPE560	Computer and Data Networks	COMPE560	Computer and Data Networks
COMPE561	Database and Web Programming	COMPE561	Database and Web Programming
COMPE565	Multimedia Communication Systems	COMPE565	Multimedia Communication Systems
COMPE570	VLSI System Design	COMPE572	VLSI Circuit Design
COMPE571	Embedded Operating System	COMPE596	Cyber Physical Systems
COMPE572	VLSI Circuit Design	COMPE596	Machine Learning for Engineering
COMPE573	VLSI Testing		
COMPE596	Machine Learning for Engineering		