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

<table>
<thead>
<tr>
<th>Depth Area</th>
<th>Undergraduate Preparation</th>
<th>Core Course(s) Plan A (Thesis)</th>
<th>Core Course(s) Plan B (Project)</th>
<th>Depth Courses (Suggested)</th>
</tr>
</thead>
</table>
EE 558: Digital Communication  
EE 641: RF Wireless Systems  
EE 650: Modern Comm Theory  
EE 652: Prin & Apps of Info Theory  
EE 653: Coding Theory |
| **Computer Networks** | EE 410: Signals and Systems | CompE 560: Computer Networks  
OR  
EE 602: Stochastic Systems  
OR  
EE 603: Engineering Optimization | CompE 560: Computer Networks  
OR  
EE 602: Stochastic Systems  
OR  
EE 603: Engineering Optimization | CompE 560: Computer & Data Networks  
CompE 565: Multimedia Comm  
CompE 596: Machine Learning  
EE 660: High Speed Nets  
EE 662: Wireless Sensor Nets  
EE 665: Multimedia Networks |
| **Electromagnetic Systems** | EE 440: Electromagnetic Waves | EE 602: Stochastic Systems  
OR  
EE 603: Engineering Optimization | EE 602: Stochastic Systems  
OR  
EE 603: Engineering Optimization | EE 540: Microwave Design  
EE 631: RF Electronic Circuits  
EE 634: RF Circuit Design  
EE 641: RF Wireless Systems  
EE 645: Antennas & Propagation  
EE 674: Sig. and Power Integrity |
| **Embedded Systems** | EE 410: Signals and Systems  
CompE 570: VLSI System Design  
CompE 571: Embedded Operating Sys  
CompE 596: Machine Learning  
EE 522: Digital Control Sys  
EE 662: Wireless Sensor Networks |
| **Energy Systems and Control** | EE 480: Power Systems  
EE 420: Feedback Control Systems | EE 584: Power Electronics  
OR  
EE 601: Linear Sys Theory & Des  
OR  
EE 603: Engineering Optimization | EE 584: Power Electronics  
OR  
EE 601: Linear Sys Theory & Des  
OR  
EE 603: Engineering Optimization | EE 522: Digital Control Systems  
EE 581: Power Systems Dynamics  
EE 584: Power Electronics  
EE 596: Power Systems Dynamics  
EE 603: Renewable Energy Systems  
EE 605: Engineering Optimization  
EE 684: Advanced Power Electronics |
EE 601: Linear System Theory  
EE 603: Engineering Optimization  
EE 654: Adaptive Algorithms  
EE 657: Digital Image Proc  
EE 658: Advanced DSP |
CompE 572: VLSI Ckt Design  
EE 530: Analog Integ. Circuit Design  
EE 634: RF Circuit Design  
EE 670: ASIC Design  
EE 671: VLSI Testing  
EE 674: Sig. and Power Integrity |
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 should follow the guidelines given below:

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 must take 6 units of EE799 and 3 units of EE799A under the supervision of a Professor as 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 EE798 (Project) under the supervision of a Professor 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 (EE797) 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 (EE798) after completing 21 units (as early as the third semester) but they must take it after completing 27 units.
- If a student switches from Plan A to Plan B, she needs 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 project advisor and the Graduate Advisor.
- International students can go for CPT after completing 18 units. They need to maintain a GPA of 3.0 or better to qualify for the CPT. They cannot work 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 EE 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 EE797 (research) and three units of EE799A (thesis): (9 units).
- Credit is not given for EE798 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 EE798 (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 thesis 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 Teh
**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.*

<table>
<thead>
<tr>
<th>Fall Semesters</th>
<th>Spring Semesters</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE503 Biomedical Instrumentation</td>
<td>EE522 Digital Control Systems</td>
</tr>
<tr>
<td>EE540 Microwave Devices and Systems</td>
<td>EE540 Microwave Devices and Systems</td>
</tr>
<tr>
<td>EE558 Digital Communications</td>
<td>EE558 Digital Communications</td>
</tr>
<tr>
<td>EE584 Power Electronics</td>
<td>EE581 Power System Dynamics</td>
</tr>
<tr>
<td>EE596 Renewable Energy Smart Grid</td>
<td>EE596 Neuromorphic Computing</td>
</tr>
<tr>
<td>EE601 Linear Sys Theory &amp; Design</td>
<td>EE602 Stochastic Signals &amp; Systems</td>
</tr>
<tr>
<td>EE602 Stochastic Signals &amp; Systems</td>
<td>EE634 RF Circuit Design</td>
</tr>
<tr>
<td>EE603 Engineering Optimization</td>
<td>EE641 RF Wireless System</td>
</tr>
<tr>
<td>EE645 Antennas and Propagation</td>
<td>EE652 Principles &amp; App of Information Theory</td>
</tr>
<tr>
<td>EE650 Modern Communication Theory</td>
<td>EE658 Advanced Digital Signal Process</td>
</tr>
<tr>
<td>EE 654 Adaptive Filter Design</td>
<td>EE665 Multimedia Wireless Networks</td>
</tr>
<tr>
<td>EE662 Wireless Sensor Networks</td>
<td>EE684 Advanced Power Electronics</td>
</tr>
<tr>
<td>EE674 Signal and Power Integrity</td>
<td>EE740 Advanced topics in physical electronics</td>
</tr>
<tr>
<td>COMPE560 Computer and Data Networks</td>
<td>COMPE560 Computer and Data Networks</td>
</tr>
<tr>
<td>COMPE561 Database and Web Programming</td>
<td>COMPE561 Database and Web Programming</td>
</tr>
<tr>
<td>COMPE565 Multimedia Communication Systems</td>
<td>COMPE565 Multimedia Communication Systems</td>
</tr>
<tr>
<td>COMPE570 VLSI System Design</td>
<td>COMPE572 VLSI Circuit Design</td>
</tr>
<tr>
<td>COMPE571 Embedded Operating System</td>
<td>COMPE596 Machine Learning for Engineering</td>
</tr>
<tr>
<td>COMPE572 VLSI Circuit Design</td>
<td>COMPE 596 Cyber Physical Systems</td>
</tr>
<tr>
<td>COMPE573 VLSI Testing</td>
<td></td>
</tr>
<tr>
<td>COMPE596 Machine Learning for Engineering</td>
<td></td>
</tr>
</tbody>
</table>