Graduate Student Orientation

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Program overview: MS program

- Focus is on obtaining mastery of a specific area through taking advanced courses and/or completing a thesis.

- A minimum of **36 units** of graduate or upper-level undergraduate coursework is required.

- Additional requirements depend on whether students choose a Thesis Option (Plan I) or Exam Option (Plan II).
Program overview: MS program

Specific requirements in each plan:

<table>
<thead>
<tr>
<th>THESIS OPTION</th>
<th>EXAM OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• At least 24 of the 36 units must come from graduate courses</td>
<td>• At least 18 of the 36 units must come from graduate courses</td>
</tr>
<tr>
<td>• At most 12 units may come from EE297/299</td>
<td>• No EE297/299 allowed</td>
</tr>
<tr>
<td>• A thesis must be submitted and defended</td>
<td>• Max 6 units from EE290</td>
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<tr>
<td>• Thesis presents original analysis of a well-defined subject</td>
<td>• Must pass the Comprehensive Exam</td>
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MS Students: Comprehensive exam

- Conducted at the end of Spring quarter. Makeup exam at the end of Summer for students who did not pass the first time.

- Must solve 5 problems
  - 3 from major area
  - 1 each from two other areas

- Areas of Specialization:
  - Nano-materials, Devices and Circuits
  - Control and Robotics
  - Communications and Signal Processing
  - Intelligent Systems
  - Integrated Circuits and VLSI System Design
Program overview: PhD students

- Focus is on conducting **novel, independent research**

- There is no official requirement for minimum amount of course work.

- But you are still expected to take courses to
  - achieve a depth of knowledge in your field
  - equip yourselves with mathematical tools to do research
  - get prepared for the Preliminary Exam
Program Overview: PhD program

- **PhD Program milestones:**
  - Pass PhD Preliminary Exam (normally at end of 3rd quarter)
  - Pass Oral Qualifying Exam (normally at end of 1st year)
  - Pass Dissertation Proposal evaluation (normally at end of 3rd year)
  - Defend PhD Thesis (normally after 5 years)

- **PhD Preliminary Exam:** 5 subjects, all from one specialization area
  - 3 basic ones (exempt if you receive A)
  - 2 advanced ones (exempt if you receive A-)

- Exam is conducted at the same times as Comprehensive exam, and students have two chances to pass
PhD: Oral qualifying exam

- Normally taken at the end of the first year

- Must form a committee of 5 faculty members
  - At least 3 ECE faculty members, at least 1 external

- Oral exam accompanied by a written report, in the style of a research paper

- Tests if you have a thorough understanding of your research field and potential to do cutting-edge research

- Once you pass the Preliminary Exam and the Oral Qualifying Exam, you are a PhD Candidate
PhD: Dissertation Proposal Evaluation

- Student proposes a concise research plan for his/her PhD dissertation

- Must demonstrate ability to perform cutting-edge research, including
  - significant results from prior research
  - in-depth understanding of research area
  - a concise plan for remaining research to be performed as part of dissertation

- Once student passes, “only” steps left are conducting research plan, writing thesis, and defending it
PhD student success

- Students passing the PhD preliminary exam

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students</th>
<th>Passed in 1 Attempt</th>
<th>Passed in 2 Attempts</th>
<th>Failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>16</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2013</td>
<td>27</td>
<td>23</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2014</td>
<td>20</td>
<td>16</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>

- Papers published per PhD student per year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1.22</td>
</tr>
<tr>
<td>2013</td>
<td>1.34</td>
</tr>
<tr>
<td>2014</td>
<td>1.46</td>
</tr>
</tbody>
</table>
For PhD students with financial support

- Report to your research advisor listed on your award statement as soon as possible

- Your continued support is contingent upon
  - a minimum GPA of 3.00
  - satisfactory performance in your research advisor's lab
The SPEAK Test

- You must get a clear pass (50 out of 60) on this test in order to
  - work as a Teaching Assistant (TA)
  - graduate with a PhD

- If you get <50 but >39, you may perform TA duties, but must participate in the ESL Program at University Extension

- The test is conducted several times a year
For questions relating to the graduate program, answers can be found:

- In the ECE Graduate manual (online at ece.ucr.edu)
- On the Graduate Division website (go to graduate.ucr.edu, follow link “Handbooks and Forms for Current students”)

If these fail, contact:

- Adrienne Thomas, Student Affairs Officer (adrienne@ece.ucr.edu)
- Tassos Mourikis, Graduate Advisor (mourikis@ece.ucr.edu)
ECE Department by the numbers

- 27 faculty members
  - 9 IEEE Fellows
  - 7 AAAS Fellows
  - 8 NSF CAREER Award recipients
  - 3 ARO and NRO Young Investigator Award recipients

- 6 adjunct faculty members, 3 lecturers, 18 cooperating faculty

- 7 staff members
Grad student statistics

- Graduate students and faculty size

This year’s admitted cohort (out of 580 applications)
- 31 MS students
- 34 PhD students
UCR EE graduate student placement

- Industry:
  - Micron
  - Emulex Corporation
  - Centre for Wireless Communication
  - Cloudscaling
  - Spirent Communications
  - Western Digital
  - Qorvo (RFMD) Inc.
  - Qualcomm Research
  - Quantum Seed LLC.
  - Innovative Sensor Technology
  - LSI Corporation
  - Google
  - Broadcom
  - Magic Leap
  - Samsung Electronics Research and Development
  - Amazon
  - Intel Corporation
  - Texas Instruments
  - IBM
  - Raytheon
  - Hitachi
  - Phillips LumiLeds
  - Fairchild Semiconductor
  - Synopsis Inc.
  - Entropic Communications

- Academia and research centers
  - UNC, Chapel Hill
  - Albert Einstein College of Medicine
  - California Baptist University
  - Bilkent University
  - CSU, Bakersfield
  - University of Oxford
  - Nanjing University of Science and Technology
  - University of Science and Technology of China
  - Bangladesh University
  - Lawrence Berkeley National Laboratory
  - Lawrence Livermore National Laboratory