Electrical Engineering

Graduate Student Orientation

Ertem Tuncel
EE People By Numbers

- 23 faculty members (2 on leave)
  - 7 IEEE Fellows
  - 6 AAAS Fellows
  - 5 NSF Career Award recipients
  - 3 ARO and NRO Young Investigator Award recipients
- 6 adjunct faculty, 2 lecturers, 16 cooperating faculty
- 21 MS and 98 PhD students
- 6 staff members
Nano-materials, Devices, and Circuits

Alexander Balandin

Roger Lake

Jianlin Liu

Alexander Korotkov

Mihri Ozkan

Elaine Haberer
Control and Robotics

Jay Farrell
Chair

Wei Ren

Jie Chen

Anastasios Mourikis

ON LEAVE
Communications and Signal Processing

Ilya Dumer

Yingbo Hua

Daniel Xu

Ertem Tuncel
Graduate Advisor
Intelligent Systems

Bir Bhanu
Matt Barth
Ping Liang
Amit Roy Chowdhury
Hamed Mohsenian-Rad
Integrated Circuits and VLSI System Design

Albert Wang

Sheldon Tan

Qi Zhu
Our Staff

William Bingham  
Financial & Administrative Officer

Adrienne Thomas  
Academic Program Officer

Steven Haughton  
Computer Systems Administrator

Trudi Loder  
Analyst

Elmar Palma  
Associate Development Engineer
EE Research By Numbers

- $6,400,000 research spending in 2009/2010
- Placed in the top quartile in National Research Council S-rankings.
- Graduated 61 MS and 38 PhD students last two years
NRC S-Rankings

- UNIVERSITY OF CALIFORNIA-SANTA BARBARA
- UNIVERSITY OF CALIFORNIA-LOS ANGELES
- UNIVERSITY OF CALIFORNIA-BERKELEY
- UNIVERSITY OF CALIFORNIA-RIVERSIDE
- UNIVERSITY OF CALIFORNIA-SAN DIEGO
- UNIVERSITY OF CALIFORNIA-SANTA CRUZ
- UNIVERSITY OF CALIFORNIA-IRVINE
- UNIVERSITY OF CALIFORNIA-DAVIS
NRC S-Rankings

- Purdue University Main Campus
- University of Michigan-Ann Arbor
- Northwestern University
- Georgia Institute of Technology
- University of California-Riverside
- Duke University
- Arizona State University
- University of Arkansas Main Campus
- Brown University
Where Our Graduates Went
For MS Students

- You need to complete 36 units of graduate or upper division undergraduate course work.

- Additional requirements depend on whether you choose the Thesis Option (Plan I) or the Exam Option (Plan II).
For MS Students

THESIS OPTION

• 24 of the 36 units should come from graduate courses
• Max 12 units from EE 297/299
• A thesis must be submitted and defended

EXAM OPTION

• 18 of the 36 units should come from graduate courses
• None from EE 297/299
• Max 6 units from EE 290
• Must pass the Comprehensive Exam
Comprehensive Exam

- Conducted twice a year
- Must solve 5 problems in 3 specialization areas
  - 3 from the major area
  - 1 each from two minor areas

Specialization areas:

- Nano-materials, Devices, and Circuits (NMDC)
- Control and Robotics (C&R)
- Communications and Signal Processing (C&SP)
- Intelligent Systems (IS)
- Integrated Circuits and VLSI System Design (VLSI)
Examples

• The good news is, many courses appear in more than one area

<table>
<thead>
<tr>
<th>EE 224 (C&amp;SP)</th>
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<tbody>
<tr>
<td>EE 225 (C&amp;SP)</td>
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<tr>
<td>EE 250 (C&amp;SP)</td>
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<tr>
<td>EE 235 (C&amp;R, C&amp;SP, IS, VLSI)</td>
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<td>EE 236 (C&amp;R, C&amp;SP, IS)</td>
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<th>EE 230 (NMDC, C&amp;R, C&amp;SP, IS, VLSI)</th>
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<tr>
<td>EE 245 (C&amp;R)</td>
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<tr>
<td>EE 215 (NMDC, C&amp;R, C&amp;SP, IS, VLSI)</td>
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<td>EE 236 (C&amp;R, C&amp;SP, IS)</td>
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• For a complete list of courses in each area, please refer to the EE Graduate Manual.
For PhD Students

• 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 (or get credit for) the Preliminary Exam
PhD Preliminary Exam

- Conducted at the end of the Spring quarter.
- Must solve 5 problems from the major specialization area
  - 3 basic courses (for each course, exempt if you receive at least A)
  - 2 advanced courses (for each course, exempt if you receive at least A-)
- If you cannot clear all 5 courses after your first try, you'll have a second chance within a month to clear them.
For PhD Students with Financial Support Packages

- Report to your research advisor (professor) listed on your award statement as soon as possible!
- Your continued support is contingent upon:
  1. a minimum GPA of 3.00
  2. satisfactory performance in your research advisor's lab
Courses Offered in Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>NMDC</th>
<th>C&amp;R</th>
<th>C&amp;SP</th>
<th>IS</th>
<th>VLSI</th>
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<tr>
<td>EE201</td>
<td>APPLIED QUANTUM MECHANICS</td>
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<td>EE215</td>
<td>STOCHASTIC PROCESSES</td>
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<td>EE230</td>
<td>MATH METHODS FOR EE</td>
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<td>EE235</td>
<td>LINEAR SYSTEM THEORY</td>
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<tr>
<td>CS218</td>
<td>DESIGN &amp; ANALYSIS OF ALGORITHMS</td>
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<td>MSE210</td>
<td>CRYSTAL STRUCTURE &amp; BONDING</td>
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<td>PHYS221A</td>
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<td>PHYS240A</td>
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- Also available are non-exam courses
  - EE 274 INTRODUCTION TO MEDICAL IMAGING AND ANALYSIS
  - EE 276 COLLOQUIUM IN VIDEO BIOINFORMATICS

- Mandatory for all first year graduate students
  - EE 259 COLLOQUIUM IN ELECTRICAL ENGINEERING
For TAs

- Attendance to one of these is mandatory
- To register, go to www.tadp.ucr.edu
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
- Students are charged a fee of $50
Safety Training

• All graduate students are required to attend the Laboratory Safety Training Orientation

• If working in a wet lab, Hazardous Waste Management training required

• If working with microwaves, radioisotopes, antennas, or other EM devices, Radiation Safety Training is required

• Go to www.ehs.ucr.edu/training to register

• Submit Certificate of Completion to Adrienne Thomas, the Academic Program Officer

• Consult Elmar Palma, the EE Safety Coordinator for safety questions
THANK YOU !