M.S. / Ph.D. Degree Planner: Medical Devices and Systems (EC90)

COURSE REQUIREMENTS

Core Coursework (twelve units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 201</td>
<td>Introduction to Biophysics</td>
<td>ECE 201</td>
</tr>
<tr>
<td>Any 2 of the following courses:</td>
<td></td>
<td>Total: 12 Units</td>
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<tr>
<td>ECE 202</td>
<td>Medical Devices and Interfaces</td>
<td>ECE 202</td>
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<tr>
<td>ECE 203</td>
<td>Biomedical Integrated Circuits and Systems</td>
<td>ECE 203</td>
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<tr>
<td>ECE 204¹</td>
<td>Topics on Medical Imaging</td>
<td>ECE 204</td>
</tr>
<tr>
<td>ECE 247 A-B-C</td>
<td>Advanced Biophotonics, Bioelectronics, Bionanotechnology</td>
<td>ECE 247 A-B-C</td>
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<tr>
<td>ECE 187</td>
<td>Introduction to Biomedical Imaging and Sensing</td>
<td>ECE 187</td>
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</table>

Twelve additional units selected from the following

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Additional Courses</th>
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</thead>
<tbody>
<tr>
<td>Two graduate courses in one major area of ECE (AOS, AP-EDM, AP-RSS, CTS, ECS CE, ISRC, PHO, SIP or NDS)</td>
<td></td>
<td>Total: 12 Units</td>
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<tr>
<td>One graduate or senior-level course in Biology, Biochemistry, or Medicine.</td>
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</table>

¹ ECE course not offered during 2015-16 academic year.

Technical Electives (twenty-four units)

- Any 4 unit, 200+ course from ECE, CSE, MAE, BENG, CENG, NANO, SE, MATS MATH or PHYS taken for a letter grade may be counted. Exceptions to this list require departmental approval.

- Up to 12 units of undergraduate ECE coursework (ECE 111+ only) may be counted (Only 12 units of undergraduate credits in TOTAL may be counted towards the degree)

- M.S. Students (Plan II) are allowed no more than 4 units of 299 as technical electives. Ph.D. and M.S. Students (Plan I) are allowed no more than 8 units of 299 as technical electives.

- Students are strongly encouraged to take at least 2 seminar courses about translational research and FDA regulatory procedures and requirements from ECE, Center for Medical Device and Instrumentation, School of Medicine, or other departments. (Will NOT be counted toward required 48 units).

Technical Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Technical Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total: 24 Units</td>
</tr>
</tbody>
</table>

Curriculum Advisor: Drew Hall
Phone no.: 858-534-3855
E-mail: dahall@ece.ucsd.edu
Office no.: Jacobs Hall/EBU1 4805

Advisor's Signature | Date

Student Name | Revised: 2015-2016 Academic Year | PID
MS AND PHD EXAM REQUIREMENTS

Master of Science (M.S.): Thesis and Written Comprehensive Exam

Students in the M.S. program may elect either Plan I or Plan II. Final choice must be made by the start of Fall quarter of their 2nd year of study (full time students) or the next exam opportunity after a student has attempted 36 units (part-time/half-time students).

Plan I (thesis)

- Students in the M.S. Plan I must take twelve units of ECE 299 (Research), eight of which can be used to satisfy degree requirements. Students must also submit a thesis as described in the general requirements of the university.

Plan II (comprehensive exam)

- Students in the M.S. Plan II (written comprehensive exam) may count 4 units of ECE 299 (Research) toward the degree requirements and must pass the departmental written comprehensive exam.

- The exam format is a written exam covering a range of topics at the undergraduate level plus a single topic covered at the graduate level (must be your graduate area of study). Students must pass 3 of the 4 sections of the exam; Math is a mandatory pass.
  - The written exam will be held every Fall quarter and the following Spring quarter on an as-needed basis.
  - Students must take the exam at the next opportunity after attempting 36 units of coursework; refusal to do so will result in a failing grade.
  - Students have only two chances to pass the exam; students who fail twice will not be granted a Master's degree.
  - Please refer to http://ece.ucsd.edu/ms_comp_exam for further information. The written exam is 4 hours in duration.

Ph.D.: Preliminary (Comprehensive) Exam

- Ph.D. students must find a faculty member who will agree to supervise their thesis research. This should be done by the end of your first year of study.

- They should then devote at least half their time to research and must pass the Ph.D. Preliminary (comprehensive) examination by the end of their second year of study (for students who enter the Ph.D. program with a Master’s degree, the exam must be completed by their fourth quarter of study). This is an oral exam in which the student presents his or her research to a committee of three ECE faculty members, and is examined for proficiency in his or her area of specialization. A written copy of the research presentation is required for the processing of the student’s exam paperwork.

- The outcome of the exam is based on the student’s research presentation, proficiency demonstrated in the student's area of specialization, and overall academic record and performance in the graduate program.

Ph.D.: University Qualifying Exam

- Students who have passed the Ph.D. Preliminary (comprehensive) exam should plan to take the University Qualifying Examination approximately one year after passing the preliminary exam.

- The University does not permit students to continue in graduate study for more than four years without passing this examination.

- The University Qualifying Examination is an oral exam in which the student presents his or her thesis proposal to a university-wide committee. After passing this exam the student is “advanced to candidacy”.

Ph.D.: Dissertation Defense

- Students who are advanced to candidacy may register for any ECE course on an S/U basis.

- The final Ph.D. Requirements are the submission of a dissertation, and the dissertation defense.

Updated on 09/2015