ECSE Master’s Program

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August 25, 2017
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Agenda

- ECSE Grad Program People.
- ECSE Master’s Program
  - MS, MEng, Co-Terminal.
- Are You Properly Registered?
  - Plan of Study for your degree.
Types of Graduate Students

- Grad students admitted to ECSE with a BS or Master’s are pursuing one of these degrees:
  - Master of Science (MS)
  - Doctor of Philosophy (PhD)
  - Masters students may eventually pursue a PhD.

- We also have “Co-Terminal” grad students who are RPI undergrads pursuing an MS jointly with their BS.
  - Co-Terminal students follow all the rules for their master’s plus a few extra.
ECSE Masters Degrees

- Master of Science (MS) with or without Thesis
  - MS in Electrical Engineering
  - MS in Computer and Systems Engineering

- Master of Engineering (MEng) – replaced by MS w/o Thesis
  - MEng in Electrical Engineering
  - MEng in Computer and Systems Engineering

Any of these can be used for Co-Terminal, but MS w/o Thesis Co-Terminal degrees are most typical.
Differences Among Degrees

w/ vs. w/o thesis matters a lot in PoS requirements.

EE vs. CSE doesn’t matter in PoS Requirements, just area of concentration/research:

**EE**
- Microelectronics
- Electronic Materials
- Electromagnetics
- Nanotechnology
- Energy
- Power Electronics
- Photonics

**Either**
- Controls
- Signal Processing
- Telecommunication
- Computer Hardware
- Electronic Circuits
- Energy Systems

**CSE**
- Computer Systems
- Computer Graphics
- Computer Networks
- Wireless Networks
- Robotics
- Imaging
Are You Properly Registered?
Per Semester Load for all Grad Students except Co-Terminal:

- Minimum 12 Credits, Maximum 15 Credits
- Full time, including RAs.
- Only Exception: TAs, Minimum 9 credits, but we don’t recommend registering only 9 credits, especially if you might need to drop one course during the semester.
- Critical, especially for a student on a visa!
- All fulltime students MUST register for 15 credits!
ADD/DROP Deadlines

- Be mindful of ADD/DROP Deadlines (no Late ADDS/DROPS allowed)

- Add deadline: September 13, 2017

- Drop deadline: October 20, 2017.

- Note drop date is much later, but you cannot drop a course if it lowers your load below 12 credits (9 for a TA).

- Deal with this by registering for 15 credits.

- Note many Math courses are 4 credits. So it can be a problem for non-TAs to drop one of these.
Per Semester Load Co-Terminal:

- Minimum 12, Maximum 21 Credits
  - Subject to UG rules in this case.
  - BUT grad courses are much harder than undergrad courses, so this max should drop if you are including grad courses.
  - Four grad courses would be a very heavy load, esp. with a TA or RA.
  - (Figure that each grad course credit ≈ 1.5 UG course credit.)
Master of Science with Thesis

- Preparation for Research Career and/or a PhD
- Emphasis on depth in research area
- Strongly recommended if considering a PhD
- 3 semesters to complete (recommended).
- Max time period 2.5 yrs (Grad School Policy)
Master’s Thesis required: Need 6 (or 9) credits of ECSE-6990 *MS Thesis* in your PoS.

Must publicly present Thesis, with Committee (3 ECSE faculty) sign off (even if also pursuing a PhD).

*Academic Advisor = Research Advisor.*

Nomination of *Master’s Thesis Committee form*: Due the beginning of the same semester the student plans to graduate (same submission date as the Degree Application form).
MS w/ Thesis Requirements

Total: 30 Credits

- 6000-Level Courses: ≥ 15 credits.
- MS Thesis: 6 or 9 credits.
- ECSE Courses: ≥ 12 credits.
- Mathematics Elective: 3 or 4 credits.
- Transfer Courses: ≤ 6 credits.
- Independent Study: ≤ 3 credits.
New last year. Replaces MEng starting this year

Focus on engineering/science knowledge, but not research

Semesters to complete: 2 possible w/ heavy load; 3 semesters more typical

Max time period 2.5 yrs (Grad School Policy)

Master’s Project an option but not typical (need a voluntary Advisor for this)

Academic Advisor = an ECSE Faculty or GPD.
MS w/o Thesis Requirements

Total: 30 Credits

- 6000-Level Courses: ≥ 15 credits.
- ECSE Courses: ≥ 18 credits.
- Mathematics Elective: 3 or 4 credits.
- Transfer Courses: ≤ 6 credits.
- Independent Study: ≤ 3 credits.
Masters MATH Electives

- MATH 4100 - *Linear Algebra*
- MATH 4300 - *Intro to Complex Variables*
- MATH 4500 - *Methods of Partial Differential Equations of Mathematical Physics*
- MATH 4600 - *Advanced Calculus*
- MATH 4700 - *Foundations of Applied Mathematics*
- MATH 4800 - *Numerical Computing*
- MATH 4820 - *Intro Numerical Methods for Diff-Eq*

Or, a related, advanced 6000-level MATH course.

Other options possible subject to GPD approval.
Co-Terminal MS

Identical to MS, except:

- Need an **existing** Research Advisor, who **fully** endorses PoS Completion by end of **Year 5** (1 AY after your normal 4-Year BS).
- ECSE strongly recommends at least **6 Non-Thesis Master’s PoS credits** by end of Year 4!
- Please note you must receive **both** BS and MS during the **same** graduation semester!
  - No “Early BS” graduation; or you will be removed from the Co-Term Program.
- Academic Advisor = Research Advisor.
PoS and PoS Worksheets

Must submit all PoS (Plan of Study) materials directly to Priscilla:

w Master’s & Doctoral Students: by the middle of this semester, e.g. by 11/1/2017.

w Co-Terminal Master’s Students (1st-revised PoS): By the end of this academic year, i.e. by 5/1/2018.

w You can revise and update them thereafter.

n Multiple times, if necessary.
Masters Students: Your Institute PoS and PoS Worksheet form is available under “Academic > Graduate Academics > Masters Degree Program > Masters Program - Files” on the ECSE Web Site:

- http://www.ecse.rpi.edu

- Remember: Pick the correct form: MS vs. MS-No-Thesis!

- You will also find these slides there.
A Few Tips and Reminders!

 Much of the PoS material is also available in your Information Packets, but read ALL OF www.ecse.rpi.edu!

 MS students, in particular, read over “Faculty” and “Research” on www.ecse.rpi.edu for Advisor Interests and General Research Areas.
A Few Tips and Reminders!

- Make sure to carefully read the “Footnotes” and “Example” within your appropriate PoS Worksheet.

- Hand in to Priscilla your completed PoS Worksheet and completed Official Institute PoS.
Important Links!

- rpinfo.rpi.edu
  - Course Catalog
  - Institute Directory, Academic Calendar (Add/Drop Deadlines!), Final Exam Schedule, etc.

- sis.rpi.edu
  - Class-Hour Schedule
  - Special-Topics Courses and New-Course Descriptions, etc.
Questions?
## Temporary Advising

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<tr>
<th>Area</th>
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<tbody>
<tr>
<td>Communication &amp; Signal</td>
<td>Prof. Birsen Yazici</td>
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<td>Processing</td>
<td>Prof. Ali Tajer</td>
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<td>Computer Engineering</td>
<td>Prof. Tong Zhang</td>
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<td>Computer Networks</td>
<td>Prof. Alhussein Abouzeid</td>
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<td>Computer Vision</td>
<td>Prof. Rick Radke (@2:30)</td>
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