ECSE Master’s Program

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ECSE Graduate Program Director (GPD)

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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.
ECSE Grad Program People

- Prof. K.S. Vastola, Graduate Program Director
  - JEC 6003, X6074, vastola@ecse.rpi.edu

- Priscilla Magilligan, Graduate Program Secretary
  - JEC 6012, X6225, pris@ecse.rpi.edu
  - Priscilla is your starting point for all grad program matters.

- Ronnie Rowe, Graduate Program Administrator
  - Student Services, Mgr. Grad Admissions & Aid.
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)
  - Master of Engineering (MEng)
  - Doctor of Philosophy (PhD)
  - Masters students may eventually pursue a PhD.
- We also have “Co-Terminal” grad students who are RPI undergrads pursuing an MEng or 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)
  - MEng in Electrical Engineering
  - MEng in Computer and Systems Engineering
- Any of these can be used for Co-Terminal, but MEng Co-Terminal degrees are most typical.
Differences Among Degrees

- MS vs. MEng 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

**CSE**
- Computer Systems
- Computer Graphics
- Computer Networks
- Wireless Networks
- Robotics
- Imaging

**Either**
- Controls
- Signal Processing
- Telecommunication
- Computer Hardware
- Electronic Circuits
- Energy Systems
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 taking 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 12, 2016.
- Drop deadline: October 21, 2016.
- 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).
MS with Thesis continued

- 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 pursing 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: \( \geq 15 \) credits.
- MS Thesis: 6 or 9 credits.
- ECSE Courses: \( \geq 12 \) credits.
- Mathematics Elective: 3 or 4 credits.
- Transfer Courses: \( \leq 6 \) credits.
- Independent Study: \( \leq 3 \) credits.
Master of Science w/o Thesis

- New this year.
- In between MEng and MS with Thesis: Focus on engineering and science, 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.
Master of Engineering (MEng)

- Preparation for Professional Practice
- Semesters to complete: 2 possible w/ heavy load; 3 semesters more typical.
- 3-Course Technical Concentration.
- 2-Course Non-Technical Sequence.
  - MGMT/ECON courses encouraged.
- Max time period 2-1/2 yrs (Grad School Policy).
- Professional Master’s Project an option (need a voluntary Advisor for this).
- Academic Advisor = ECSE Faculty and/or GPD.
MEng PoS Requirements

Total: 30 Credits

- 6000-Level Courses: ≥ 18 credits.
- Non-Technical Courses: ≥ 6 credits.
  - Tech = Eng’g, Physics, Chem, Math, CS, ...
- ECSE Courses: ≥ 15 credits.
- Technical Concentration: 3 courses (9 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 MEng

Identical to MEng, except:

- PoS must reflect completion by end of Year 5 (that is, 1 AY after your normal 4-Year BS).
- ECSE strongly recommends, at least 6 Master’s credits by end of Year 4!
- Please note you must receive both BS and MEng during the same graduation semester!
  - No “Early BS” graduation; or you will be removed from the Co-Term Program.
- Academic Advisor = Undergraduate Advisor.
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 MEng 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:

- **Master’s & Doctoral Students**: by the middle of this semester, e.g. by 11/1/2016.
- **Co-Terminal Master’s Students (1st-revised PoS)**: By the end of this year, i.e. by 5/1/2017.
- You can **revise** and **update** them thereafter.
  - 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](http://www.ecse.rpi.edu)
- **Remember**: Pick the correct form: **MEng** vs. **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?