UC Davis Department of Civil and Environmental Engineering

MS Program Overview

September 24, 2019

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MS I Thesis vs. MS II Project/Exam

Project/Exam:

- The default pathway for MS students
- Can be completed in 3-4 quarters
- Slightly greater course requirements
- Exact way of satisfying this varies by Area (more later)

Thesis:

- Slightly fewer course requirements
- Requires substantial, original research that is presented in a written document (typically 40-80 pages), similar to a journal article
- Requires more time: typically ~ 2 years
- Requires agreement of Major Professor

MS I Thesis vs. MS II Project/Exam

How do you choose between the two?

1. Think about your career goals and academic interests
2. Recognize that a thesis is a much more substantial commitment, both in terms of time and energy
3. Understand that the thesis option requires explicit support from a faculty member, and that there are only so many thesis projects available…it is not solely your decision
   - It is common for students to prove themselves through coursework
4. Realize the timeline for the MS I is less predictable compared to the MS II
5. It is possible to switch between the two. You are not locked in by any decision today.

MS Degree Requirements

	Plan I MS	Plan II MS (with Written Exam)	Plan II MS (with Individual Capstone Project)	Plan II MS (with Capstone Project Course)
Minimum number of graded graduate engineering course units (exclusive of 290C and 299)	23**	31**	27**	27**
Minimum number of graded graduate and undergraduate* course units (exclusive of 290C and 299 and courses listed below)	27*	35*	31*	31*
Capstone Course				4***
ECI 299 and ECI 290C (Independent study or research) One unit of ECI 290C must be included each quarter when 299 units are taken.	8 required	None required	4 required	None required
TOTAL MINIMUM UNITS REQUIRED	**36**	**36**	**36**	**36**

* ECI 296, prerequisite courses, and S/U Graded courses do not meet these requirements.

** Must also meet core course requirements and fulfill the Public Speaking and Technical Presentation Proficiency Requirement

*** Students who are satisfying the Plan II project requirement via the capstone course may not use this towards the 31 unit minimum.

Courses

Your course plan should be coherent

- *Most* CEE courses are 4 units. *Some* are 3 (or even 2 or 5).
- MS II (project/exam): 31-35 units = 8-9 courses
- MS I (thesis): 27 units = 7 courses

Courses Outside CEE

- *All* graduate engineering courses count (but must make sense)
- May take 1 undergraduate course within CEE or a UG or Grad course outside CEE without explicit permission
    - Exception is prerequisite courses. These do not count.
- *Some* graduate courses outside of Engineering can be counted for the graduate engineering course requirement…get *written* (e-mail is fine) approval from Area Advisor or Major Prof.

Courses

Required Core Courses

- Group specific
  - ENV ≠ WRE ≠ Geotech ≠ Structures ≠ Transportation
- Must satisfy core course requirement for one group
- Some groups are very prescribed, others are choose *n* of those listed

290C and 299

- 299 = research units
- 290C = group meeting
- Always sign up for 290C when you sign up for 299
- Taken with a *specific* faculty member
- Primarily for MS I students

MS Program of Study

- Your personal “roadmap” to graduation
- Reviewed and approved by either your Major Professor or your Area Advisor
- Discuss with the Area Advisor or your Major Professor at end of **first quarter**
- Submit approved PoS to Lauren by the 2nd week of the **second quarter** of entering the MS program (or sooner)
- Courses offered available on CEE website, SISWEB or by talking with your Area Advisor/Major Professor
- MS Program Of Study available on CEE website (updated version coming soon!!):
  http://cee.engr.ucdavis.edu/graduate-resources/

Mentoring and Your Major Professor

- For MS II students, the Area Adviser is your default MP
  - You may find an alternative major professor
- All MS I students must have an individual major professor
- How to find an alternative MP, if you don't have one?
  - Talk to multiple faculty.
  - Look at websites, publications and courses taught to get an initial idea of the specific type of work they do.
  - Be clear about your goals (MS I or MS II)
  - Schedule meetings (e-mail…be persistent) or drop in (does not always work)

MS II Project/Exam

- Each Area does things slightly differently…when in doubt talk with your Area Advisor. All MS need 36 units total.

Default Option for Env/Water/Tra Students

- Take (and pass) ECI 289C project course in Spring Quarter

Default Option for Geo Students

- Take (and pass) ECI 289D course series and complete capstone project

Default Option for Structural/Mechanics (SESM) Students

- Take 35 units of graded coursework (at least 31 grad)
- Pass written comprehensive exam; typically take in spring or summer of Y1; may retake; offered multiple times a year

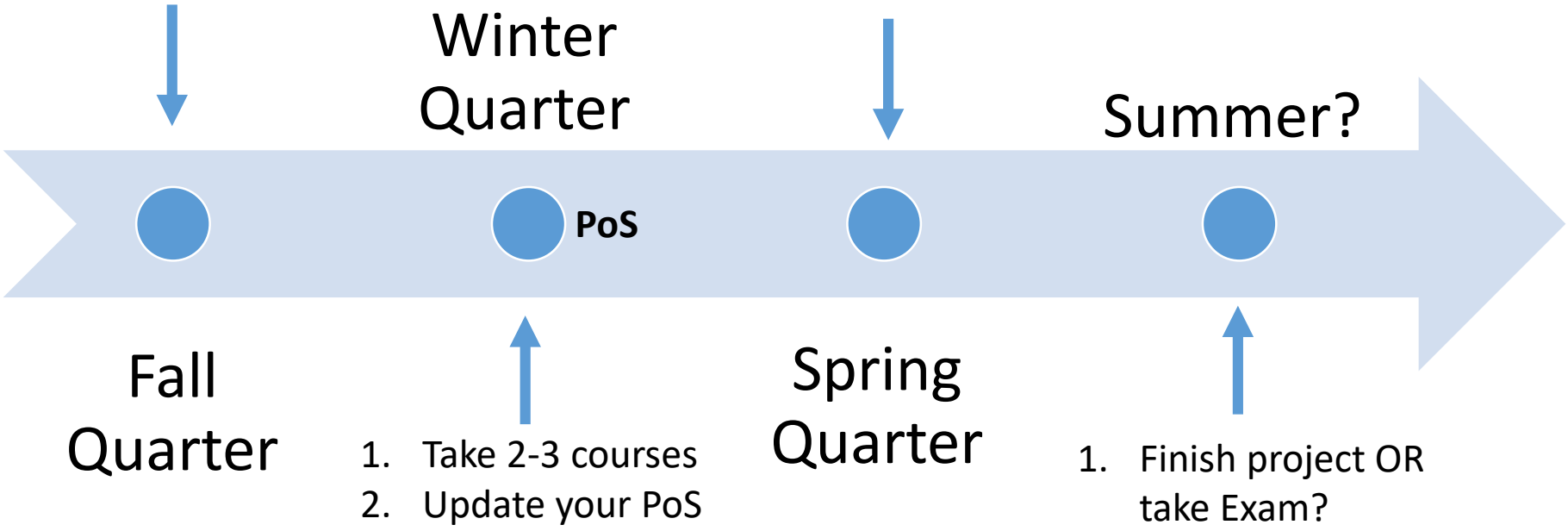
Option Available for all Areas

- Complete a project under the supervision of an individual faculty member over 1-2 quarters (and/or summer); 4 units research required (ECI 299/290C)

MS II Timeline

1. Take 3 courses
2. Develop *complete* program of study
3. Consult with area advisor

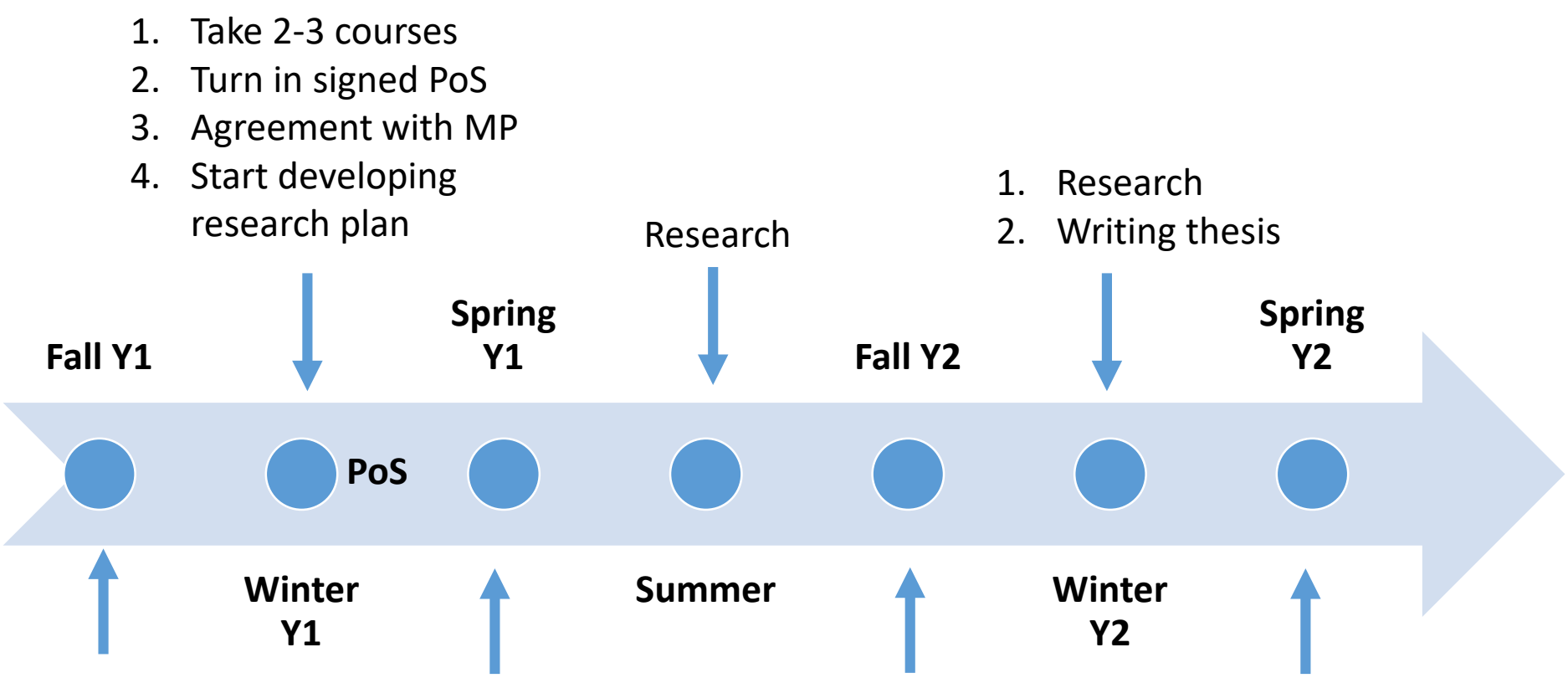
1. Complete coursework
2. Update your PoS
3. Complete project OR take Exam (SESM) OR take ECI 289C (ENV, WRE, TRA)



1. Take 2-3 courses
2. Update your PoS

1. Finish project OR take Exam?

MS I Timeline



Prerequisites – Students without Engr. Degree

Select four courses from the following six categories:

ECI 100*	Fluid Mechanics	4 units
ENG 104	Mechanics of Materials	4 units
ENG 105**	Thermodynamics	4 units
ECI 140B	Aquatic Chemistry	4 units
ECI 141	Engineering Hydraulics	4 units
ECI 115	Computer Methods	4 units
ECI 114	Probabilistic Systems Analysis	4 units

***ENG 103 may be alternatively taken, with permission**
****Or Chem 110C or Chem 107A or Chem 107B**

These do not count towards the degree requirements

Including at least two of the following classes:

- ECI 100
- ENG 104
- ENG 105
- ECI 140B

And 6 additional upper division engineering course units (minimum of 2 courses) approved by the student's major professor or GPC Rep