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MS Program: Proficiencies

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Background

- Some students admitted to the MS program have weak CS preparation.

- Areas of particular weakness are listed as "proficiency requirements" in the admission offer letter.

- These requirements are in addition to the usual MS reqs. and may lengthen the total program time (one more semester common).

- The default way to satisfy the requirements is to take recommended undergraduate or bridge courses.

- **BUT**, a graduate student cannot take an undergraduate course and claim graduate credit, nor apply credits to full-time status.

- We have a special graduate "cover" course, **CSE 587**, that can be used as a vehicle for grad students to take UG courses.

The Need for a Proficiency Plan

- A student may have already taken an UG course in an indicated weakness area (perhaps after applying to the MS program)

- A student may have significant work experience in an area; this along with a set of related UG courses may offset an indicated weakness.

- A student may have significant strengths that lead us to believe that he/she will survive in a graduate course instead of having to take an undergraduate course.

- In one-on-one advising sessions (contact Prof. Zadok) , we

    plan out a path (called "Proficiency Plan") …

    … considering each student's preparation, …

    … to fulfill the requirements in the offer letter.

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Proficiency Courses

Course	Title
CSE-303/CSE-581	Theory of Computation
CSE-304	Compilers
CSE-305	Databases
CSE-306	Operating Systems
CSE-583	Programming Languages
CSE-308	Software Engineering
CSE-310	Computer Networks
CSE-320	Systems Fundamentals II (covers "Operating Systems")
CSE-582	Algorithms

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Proficiencies: Examples and Rules

- "Algorithms or Theory of Computation" means you have to take only one of Alg. or ToC to satisfy this proficiency.
- "Operating Systems" means you can only take the OS course to satisfy the proficiency.
- "Programming Languages" means you can only take the PL course to satisfy the proficiency.
  - Note: "PL" is a course on the theory of programming languages, not a course where you learn how to program. Merely knowing how to program does *not* satisfy the PL proficiency.
- You cannot take the graduate version of *any* proficiency course until you satisfy the proficiency first.
- We do not accept online courses in lieu of accredited undergraduate courses.
- Cannot go on internship (i.e., get a CPT) until all proficiencies are passed.

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Option 1(a): CSE 587   [3 credits]

- To fulfill a proficiency requirement, a student takes a specified UG course via CSE 587.

- We have one section for each instructor of an UG proficiency course.

- **Example:** Prof. Stark is teaching CSE 320, and it is listed under Section 02 of 587.
  - If you have a "OS" requirement in your offer letter, you may take CSE 587-02. [with permission of GPD/GPA]
  - You will attend CSE 320 lectures, and do same homeworks and take same exams.
  - You will have cleared the "OS" requirement if you get a B or better in CSE 587-02.

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Option 1(b): CSE 5XX   [3 credits]

- We are moving away from using undergraduate courses for proficiencies
- Instead, students will take special, graduate level "bridge courses", instead of CSE-587 as a "cover" for some undergraduate CSE-3xx course
- The transition is underway
  - Take any offered Bridge course instead of an undergraduate one
    - C or better to pass
  - Take the undergraduate one (option 1a) otherwise
    - B or better to pass
- New offering
  - Alg: CSE-582 (instead of CSE-373)
  - PL: CSE-583 (instead of CSE-307)
  - Later offering: ToC: CSE-581 (instead of CSE-303)
- No need for special permission to enroll in bridge courses: just register directly.

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Option 2: Graduate Course

[Rare]

- A student may have background in related areas that do not quite remove the weakness, but indicates possible success in a grad course instead.

- Then, the GPD/GPA may permit the student to take a grad course to satisfy a proficiency requirement.

- Note advantages over Option 1:
    1. "C" or better in grad course is sufficient for proficiency
    2. Grad course may count for breadth

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Option 3: Waiver

[Very Rare]

- A student's background may indicate that the weakness is insignificant.

  - E.g., past courses taken plus work experience

- **Then we waive the need to satisfy that proficiency requirement.**

- Examples:

  - You have a "networking" proficiency but you worked for Cisco for 5 years on their IOS software.

  - You have the "OS" proficiency, but you took an identical course that was named something different on your transcript.

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Proficiency and Graduation Credits

- **All credits** are counted from all courses taken to satisfy proficiency requirements.

- *This is regardless of whether a grad course, bridge course, or CSE 587 is used to satisfy a requirement.*

- *However:*

  - Recall the requirement to take a certain number of lecture courses (e.g., Advanced Project Option: 7 or more lecture courses)

  - 587 and Bridge courses **do not count** towards these lecture courses

- Recall the offer letter: these requirements are over and above the usual ones for an MS degree.

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Advising Process (Virtual)

- **Provide Latest Transcripts**
  - May have courses not present at application time

- **Provide Syllabus for year you took the course**
  - To determine equivalence of courses: must be a very close match.

- **Provide latest Resume/CV**
  - To evaluate any relevant work experience

- **If you think Options 2 (Grad course) or 3 (Waiver) applies to any of your stated weaknesses, present your rationale.**
  - We will make a 2-semester plan to satisfy the requirements considering (a) your rationale for the above, and (b) availability of seats in courses.

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Permission to Register

- We will issue permission to register in 587s for courses in your proficiency plan.

- Email the proficiency plan and the registration permission forms to gradadvising@cs (Graduate Program Coordinators, or GPCs).

- GPC will put the plan on your file and hand you a copy for your records.

- GPC will also give permission to enroll in 587 on Solar.

- We will handle permission to enroll in any other graduate course separately (no paper).

- Use the permissions to register ASAP (reserved seats fill up quickly).

Questions?

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