

## UCSD CSE M.S. Comprehensive Exam

### Fall 2015 Curriculum

Revised: September 7, 2016

#### Who?

Students planning to complete their M.S. in CSE degree via the *Comprehensive Exam* option under the Fall 2015 curriculum. This includes those who matriculated into the M.S. in CSE program in Fall 2015 or Spring 2016, as well as those who matriculated *earlier*, meet the requirements of the 2015 curriculum, and are electing to graduate under the comprehensive exam option of the newer 2015 curriculum. Students matriculating after Spring 2016 are not eligible for the Fall 2015 curriculum, and therefore not eligible for the version of the comprehensive exam option described herein.

#### What?

The comprehensive exam is an alternative to the *thesis* option. It is a 3-hour long, traditional, closed-book/closed-notes written exam, which covers three (3) different areas of Computer Science and Engineering, each of which is allocated 1-hour of exam time. Subject to any published constraints, students are able to select the three (3) areas in which they will be tested from those made available for each sitting. Students make this selection as part of the online registration for the exam.

The following offerings are presently planned for Fall 2016, Winter 2017, and Spring 2017:

- Algorithms [CSE 202]
- Architecture [CSE 240A]
- Artificial Intelligence (AI) [CSE 250A, CSE 250B, CSE 253, CSE 255]
- Compilers [CSE 231]
- Databases [CSE 232]
- Distributed Systems [CSE 291/Kesden, CSE 223B]
- Embedded Systems [CSE 237A]
- Operating Systems [CSE 221]
- Programming Languages [CSE 230]

Please note the following:

- Students cannot receive credit for both Distributed Systems and Operating Systems, because they are considered to be too closely related (“Software Systems”).
- AI is designed for students who have completed up to week 8 of *any one* of the listed courses.
- It is likely that the program will use a survey or other tool for feedback to validate and/or fine-tune these plans. In general, the only areas selected for exams are those with the largest or otherwise most populous classes. This is to ensure that the exam cuts across common experiences, rather than specializations. Special requests are not granted.
- Computer Engineering students, like other students, are free to choose the areas in which they will be tested. Having said that, Computer Engineering students are envisioned to choose Architecture, Embedded Systems, and another area, e.g. Compilers or Operating Systems.

#### Why?

The University of California requires that Masters degree programs include a comprehensive exam and/or a thesis. This exam is one way to satisfy that requirement. Students who are interested in, or want to explore, a career in research might be better served by undertaking a thesis under the mentorship of a faculty member. But research is a serious undertaking and can be a significant, and sometimes uncertain, time commitment. For those for whom a thesis is not appealing, this exam provides a flexible, schedulable capstone experience. If you'd like to talk about which option might be best for you, or help finding a research mentor, please contact your academic or faculty advisor.

## **When?**

The exam is presently planned for 6:00PM-10:00PM on the Friday of week eight of each of the Fall 2016, Winter 2017, and Spring 2017 quarters. No sitting is planned for the summer. Sittings are not yet planned for beyond those listed.

Approximately 3-4 weeks before the exam, students will be invited by email to register for the exam and choose the sections they would like to take. Registration closes approximately 2 weeks before the exam. Details will be emailed to all M.S. in CSE students each quarter as the time approaches. Please make sure to check your @eng.ucsd.edu email regularly, or forward it to an account that you do check regularly.

## **Where?**

The room will be announced by email approximately one week before the exam. We cannot reserve a room of appropriate size until we know how many students are registered for the exam.

## **How...?**

### **...to prepare for the exam?**

In many ways, the exam is like three 1-hour “mini” course final exams. So, in cases where you have recently taken an associated course, you should prepare as if preparing for the course’s final exam. In cases where you haven’t taken an associated course for a couple of years or more, you should plan to spend more time preparing and to use the most recent instance of the course on the Web, in addition to your original materials, to help focus your effort. For reading courses, it is important to review the list of papers and ensure that they remain familiar to you.

It is imperative to understand that the exam is not graded. In each area, your performance is assessed simply as “Attempted” or “Passed”. The “passing score” may be different for each area. For example, certain areas may include multiple courses or courses which have had significant variances over time, such as may be the case with different instructors. In these cases, students may be permitted to choose questions – or the “passing score” may simply be adjusted lower, in recognition of the fact that not all material will be accessible to all students. Certain other courses have remained very consistent over time and may have higher passing thresholds.

### **...to sign up for the exam and choose areas?**

A link will be provided to you via email, most likely during week 5 or 6 of the quarter.

### **...to take the exam?**

Relax. Do your best. Don’t stress. Show your work.

Remember – you do not know the passing score. Some exams could require 70% (or more) to pass. Others might only require 30% to pass. Unlike a normal in-class exam, you can’t really estimate your performance during the exam – you don’t know how many points you are expected to earn. And, remember, it isn’t graded. There is no such thing as an “A” or a “C”.

## **How...to take the exam? (cont.)**

Exam venue rules:

- Bring writing instruments to the exam – they will not be provided
- Electronic devices are not permitted to be powered on during the exam. The venue has a clock.
- Scrap paper is provided – do not bring your own. All paper, including scrap paper, is collected.
- Students may not talk about the exam with anyone except program faculty, staff, and proctors, until released to do so.
- Because each student may need a different amount of time, each student must remain in their seats until the end of each 1-hour exam period. One cannot leave early if one finishes early. It distracts others.
- A break is provided between each 1-hour long exam period.

## **...to receive your results?**

You will be emailed your results. Because the exams must be graded and the results reviewed by the exam committee, it can take 2-3 weeks, or more. Please be patient.

## **...to review your graded exam?**

Exams will not be returned, but they will be retained and you may review them by making an appointment with Greg Kesden, [gkesden@eng.ucsd.edu](mailto:gkesden@eng.ucsd.edu).

## **...to appeal your score?**

After reviewing your exam, if you would like to appeal the grading, you may do so. Appeals are made in writing and should be given to Greg Kesden, [gkesden@eng.ucsd.edu](mailto:gkesden@eng.ucsd.edu). Appeals are initially reviewed by the original grader or supervising faculty member. Subsequently, upon request, the appeal may be provided to the exam committee for a second level review. If requested, the third and final level of review within the department is to the department chair. In each case, the same initial request will be reviewed, so it is important that it raise all issues and be complete.

## **Fine Print**

- Students may not sit for the exam more than twice. Students who do not pass the exam within two sittings are not eligible to sit for the exam again.
- Students may not sit for exams in more areas than remain outstanding. For example, if a student passes two areas during their first sitting, they may only sit for one area during their second sitting. (A student may choose to sit for fewer than the outstanding number of areas, but this may not be a good plan, please talk to your faculty or academic advisor before choosing to do this.)
- For students who matriculated under a curriculum earlier than Fall 2015, it is important to note that, the “Project Option” is considered by the University to be a comprehensive exam option. No determination has been made as to whether a student who twice attempts but does not pass the AY2015 comprehensive exam may then choose to attempt the pre-Fall 2015 project-option comprehensive exam.
- The program is free to make changes and exceptions at any time, as it, alone, deems to be in the best interest of the students and the program.

## Frequently Asked Questions (And, Their Answers, too!)

Q: Is there a similar document for the new, 2016 curriculum? We hear that the exam will work differently for incoming students and those who choose to move forward to the 2016 curriculum.

A. Yes. But, do note that, although possible, it is likely impractical for those who matriculated prior to Fall 2016 to graduate under the AY2016 curriculum. Regardless, the AY2016 Exam information can be found here (<http://cseweb.ucsd.edu/~gkesden/ms/2016/2016MSCompExamInfoSheetv1.pdf>).

Q. Is there a similar document for those under 2014 and prior curricula?

A. Prior to the 2015 curriculum the comprehensive exam was integrated into the project option. Information about the project option can be found here (<http://cse.ucsd.edu/node/58>), under "Comprehensive, Standard Plan".

Q. The exam option offered under the 2016 curriculum sounds really nice. I matriculated in 2014 or 2015. Will it work for me?

A. This will be addressed in the 2016 version of this document, when available. In principle, you can transition to a newer curriculum. The challenge in this case is that you would seemingly need to satisfy the new exam requirement with additional classes, because the classes offered to date were not packaged to include comprehensive exam material.

Q. If I pass some, but not all, of the sections of the traditional, written comprehensive exam described in this document, will I be able to complete the rest of the exam by taking classes under the new AY2016 curriculum?

A. No. One may not mix and match curriculum years. You must meet all of the requirements of the curriculum under which you matriculated, or all of the requirements of a newer curriculum.

Q. If I don't pass the comprehensive exam after two attempts, what are my options?

A. If you can find an advisor, you can undertake a thesis. No determination has yet been made as to whether a student who matriculated prior to AY2015 and twice attempted, but did not pass, the AY2015 comprehensive exam may then choose to attempt the pre-Fall 2015 project-option comprehensive exam. It may also be possible to satisfy the requirements of the 2016 curriculum, but this could require taking significant additional coursework.

## Other Questions?

Feel free to contact Greg Kesden, [gkesden@eng.ucsd.edu](mailto:gkesden@eng.ucsd.edu), or your academic advisor.