ECE M.S. Program
Comprehensive Examination
2022-2023 Academic Year

Students planning to complete their M.S. degree in ECE via the Comprehensive Examination (Capstone: Plan II) are required to successfully pass three course-hosted comprehensive exams.

Course-hosted comprehensive exams are practical exams designed to evaluate students’ abilities to apply what they have learned in the course. In order to ensure that the exam is relevant and presented in context, it will be the course’s final exam or overall course grade. In most cases, the associated work serves dual purposes, contributing independently to students’ course grades as well as to their comprehensive exam scores.

The exam will take the form of the specific course’s final exam or overall course grade. The availability of courses, or course-hosted exam offerings, is subject to change per the faculty committee.

Comprehensive Exam Policies
- Students are **required to successfully pass comprehensive exams in three (3) courses** (see the list of eligible courses below). The results are based on the course’s final examination or overall course grade.
- Students are permitted a maximum of five (5) attempts. This means that a student can fail at most two attempts and still be eligible for their M.S. degree under the Plan II comprehensive exam option.
- Students who do not pass the comprehensive exam in a course may not retake the comprehensive exam for that course. They will have to take a different course in another quarter.
- Students must be currently enrolled and select the “Letter” grade option for a course in which they register to attempt the comprehensive exam.
- The ECE Student Affairs team will notify students of their comprehensive exam result(s) via their UCSD email.

Registration for Course-Hosted Comprehensive Exams
- The [Comprehensive Exam Coordinator](mailto:comprehensive.exam.coordinator@ucsd.edu) will announce course-hosted exam registration via email at the beginning of Week 3 each quarter during the academic year. The registration period closes on Friday at 4:30PM (Pacific Time) of Week 4. Please note that no eligible ECE courses are offered during Summer Session. Students must register in advance via the registration form by the specified deadline in each of Fall, Winter and Spring quarters if they would like to attempt a comprehensive exam.
- Students are allowed to edit their responses during the registration period. No changes will be allowed after the deadline of Friday at 4:30PM (Pacific Time) of Week 4.
- Once the registration is closed, the attempt is counted, even if the student drops or withdraws from the class or does not complete the exam component for any reason. Students must be careful to ensure that they have submitted their correct course-hosted exam selections before the registration deadline.
Plan II M.S. students must pass three (3) comprehensive exams from among the following ECE courses:

- **201** Intro to Biophysics
- **203** Biomedical Integrated Circuits & Systems
- **204** Statistical Learning in Bioinformatics
- **212AN-BN** Nanotechnology, Nanoelectronics
- **222A-B-C-D** Antennas, Electromagnetics, Computational Methods, Design
- **225A** Probability & Statistics for Data Science
- **230A-B** Solid State Electronics I, II
- **240A-B-C** Lasers, Optical Information Processing, Optical Modulation & Detection
- **247A-B-C** BioPhotonics, BioElectronics, BioNanotechnology
- **250** Random Processes
- **251A-C** DSP I, Filter Banks & Wavelets
- **253** Digital Image Processing
- **255A** Information Theory
- **258A** Digital Communications I
- **260A-B-C** VLSI Digital System Algorithms, VLSI Integrated Circuits & Systems, VLSI Advanced Topics
- **264A-B-C** CMOS Analog Integrated Circuits & Systems I, II, III
- **265A-B-C** Communication Circuit Design I, II & Power Amplifiers
- **269** Linear Algebra
- **271A** Statistical Learning I
- **272A** Stochastic Processes
- **276A** Sensing & Estimation Robotics
- **278** Mathematical Topics for the Master’s Comprehensive Exam

* The overall grade for the course instead of the final exam will be used towards the comprehensive exam attempt for these courses.

**Note:** The department cannot guarantee that all eligible courses listed above will be offered each academic year. Please check the course offerings section on our website and WebReg each quarter.
FAQs

Q. How can I best prepare for the exam?

A. Given that the comprehensive exams are the course's final exam or overall course grade, you don’t need to do anything special to prepare for the comprehensive exam beyond what you do to prepare for the course. Prepare as you normally would for the final exam using TAs and other course support, as permitted by the course’s policies.

Q. How and when will I be notified about my comprehensive exam result(s)?

A. The ECE Student Affairs team will email your comprehensive exam result(s) (PASS or FAIL) within two weeks of your final exam(s) to your UCSD email address. An email will come directly from the Comprehensive Exam Coordinator. There is no need to ask the instructor about the comprehensive exam as the results are released by the department.

Q. How can I review my graded exam?

A. The material is managed by the course staff (professor and TAs), in the same way as other course assignments.

Q. How can I appeal my score?

A. If you would like to appeal your course-hosted comprehensive exam result(s) that you signed up for, you may do so by emailing your course instructor(s) and CC the Comprehensive Exam Coordinator for that quarter. Appeals are initially reviewed by the original grader or supervising faculty member. Written appeal requests must be submitted within 1 week after the comprehensive exam results are released.

Q. If I don’t pass the comprehensive exam after five (5) attempts, what are my options?

A. Students may pursue the M.S. thesis option (M.S. Plan I), but there is no guarantee that they will find an advisor. Please meet with your primary M.S. advisor if you fall under this category.

Q. If I do not pass a course’s final exam, can I repeat the course and try again?

A. No; you will need to pick another course.

Q. If a course is cross-listed with another department, can I take the course with the other department and count it towards the comprehensive exam? For example, MAE 280A is cross-listed with ECE 272A.

A. No; you will need to take the ECE version if you want it to count towards the comprehensive exam.
Q. I am a CE student (EC79), can I use a CSE course that’s listed on my degree planner to count towards the comprehensive exam attempt?

A. No; you will need to take the approved ECE courses listed in this document.

Q. Do I need to register for the course(s) every quarter for the comprehensive exam?

A. A new form will be sent out on Monday of Week 3 each quarter that only lists available courses for that quarter. You are not required to register every quarter as long as you can fulfill the requirement within 6 quarters. It is up to the student to decide on how many course(s) you would like to register each quarter. Please contact your primary M.S. advisor if you are in doubt.

Q. What is the pass/fail rate for the comprehensive exam?

A. The department cannot disclose the pass rate for the comprehensive exam. If you find out that you did not pass the comprehensive exam and think that there was an error in the grading, then you are welcome to submit a regrade request to the course instructor. The department sets the cutoff for each course and we do not disclose the pass/fail rate to the students.

Q. If I am a thesis student, should I register for the course-hosted comprehensive exam?

A. If you plan to complete the thesis as your capstone requirement, we highly encourage you to still register for the comprehensive exam in the case you do not pursue the thesis. Many times students change their minds about pursuing the thesis and we’d rather you have the course-hosted comprehensive exams as a backup. If you plan on doing the thesis, please email your primary M.S. advisor by the end of your first year.

Q. I am currently an undergraduate student who just got accepted into the B.S./M.S. program and I am planning to take some of the listed courses and transfer those units to my M.S. degree later. Can I register for the course-hosted comprehensive exams?

A. ECE undergraduate students who are accepted into the B.S./M.S. program may register for the course-hosted comprehensive exams while they are still an undergraduate student. An email will be sent out to all admitted B.S./M.S. students on Monday of Week 3 each quarter with a B.S./M.S. Comprehensive Exam Registration Form.

Q. Is the capstone requirement we select - Plan I or Plan II reflected on the M.S. degree/diploma we get from UC San Diego?

A. The capstone requirement that you select and complete will not appear on your diploma or transcript from UC San Diego. The results of the comprehensive exams and thesis will not appear on your diploma or transcript.
Q. If I enrolled and registered for a course (EX: ECE 250) for my comprehensive exam in Fall quarter, then at a later time I decided to withdraw from the course with a “W”. Am I allowed to enroll in that same course and register that course as my comprehensive exam again in a later quarter?

A. Yes, you are allowed to enroll in the same course and register that course as one of your comp exams in a later quarter. However, you will be using two attempts on this course, out of the five total attempts.

Q. If I enrolled but did not register for a course (EX: ECE 250) for my comprehensive exam, later I decided to withdraw from the course with a “W”. Am I allowed to enroll in that same course and register that course for my comprehensive exam again?

A. Yes, you are allowed to enroll in the course and register that course as one of your comprehensive exams.

Q. Is there a deadline for me to complete my comprehensive exam capstone requirement?

A. Yes, the deadline is your graduating quarter. You may enroll and register for course-hosted comprehensive exam(s) during your graduating quarter in the program, upon successfully passing 3 comprehensive exams, you will meet the comprehensive exam capstone requirement. It is highly recommended that you do not enroll and register for more than 2 comprehensive exam courses in a quarter, especially during your first quarter in the program.

Q. If I received a C- and passed the course, did I pass the comprehensive exam for that course as well?

A. Not necessarily. If the course is using its final exam as the comprehensive exam, a student could score poorly in their final exam (not passing the comprehensive exam) but do well in other assignments to bring up the overall grade for that course to receive a passing grade. If a course is using its overall course grade for the comprehensive exam, the department will determine the cutoff for that course and it may or may not be higher than a passing grade.

Q. If I requested an “incomplete” for a course (EX: ECE 250) and my final exam is scheduled at a later time, does my final exam still count towards the comprehensive exam?

A. Yes, your final exam can still be used to count towards your comprehensive exam. Please note that your final exam will be different from the original final exam, however, the department will use the same cutoff score to determine your comprehensive exam result, considering that the difficulties of the two final exams should be at the same level.