ECE M.S. Program
Comprehensive Examination

Effective Fall 2021

Students planning to complete the M.S. degree in ECE via the Comprehensive Examination (MS 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 midterm*. 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 or midterm exam. 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 list of eligible courses below). This is the course's final or midterm examination.
- Students are permitted a maximum of five attempts. This means that a student can fail at most two attempts and still be eligible for the MS 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 should be currently enrolled and select the “Letter” grade option for a course in which they register to attempt the comprehensive exam.
- Student Affairs will notify you of your comprehensive exam result(s) via your UCSD email.

Registration for Course-Hosted Comprehensive Exams
- ECE MS advisors 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 in the summer. Students must register in advance via the registration form by the specified deadline in each of Fall, Winter and Spring quarters.
- 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.

Last updated 1/14/2022
ECE M.S. Program
Comprehensive Examination
Eligible ECE Courses

Plan II MS students must pass three 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
260A-B* VLSI Digital System Algorithms, VLSI Integrated Circuits & Systems
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 MS Comp Exam

*The midterm instead of the final exam will be used towards the comp exam attempt for these courses.
FAQs

Q. **How can I best prepare for the exam?**

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

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

A. The ECE department will email your comprehensive exam result(s) (PASS or FAIL) within two weeks of your final exam(s). An email will come directly from one of the Graduate Advisors. 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 the failed final or midterm exam grade associated with the course-hosted comp exam that you signed up for, you may do so. Appeals must be made in writing and should be submitted to your MS staff advisor. Appeals are initially reviewed by the original grader or supervising faculty member. Subsequently, upon request, the appeal may further be reviewed by additional faculty and/or the department chair.

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

A. Students may pursue the MS thesis option (MS Plan I), but there is no guarantee that they will find an advisor.

Q. **If I do not pass a course's exam materials, 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 comp 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 comp 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 comp 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 comp 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 Advisor if you are in doubt.

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

A. If you plan to do the thesis, 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 comp exams as a backup. If you plan on doing the thesis, please email your Primary Advisor by the end of your first year.

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

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

Q. Is the capstone requirement we select - Plan I or Plan II reflected on the MS 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 comp 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 comp 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 comp 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 and registered for a course (EX: ECE 203) that counts the course’s mid-term for my comp exam, I took the mid-term, however, I decided to withdraw from the course after that, will my mid-term count if I pass the mid-term comp exam?

A. No, if a student does not complete the course, the comp exam result will not count. This will count as a failed attempt. You may enroll in the same course and register for that course as one of your comp exams in a later quarter.

Q. If I enrolled but did not register for a course (EX: ECE 250) for my comp 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 comp exam again?

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

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

A. Yes, the deadline is your graduating quarter. You may enroll and register for course-hosted comp exam(s) during your graduating quarter in the program, upon successfully passing the comp exam(s), you will meet the comp exam capstone requirement. It is highly recommended that you do not enroll and register for more than 2 comp 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 comp exam for that course as well?

A. Not necessarily. Your comp exam results depend on the courses’ final or midterm exams. A student could score poorly in their final or midterm exam (not passing the comp exam) but do well in other assignments to bring up the overall grade for that course to receive a passing grade.