

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 exams*. 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. 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 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 sure to select the "Letter" grade option for a course in which they will attempt the comprehensive exam.

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. 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.
- Once a student has registered, 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.

**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

212A-B 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

278 Mathematical Topics for the MS Comp Exam

FAQs

Q. How can I best prepare for the exam?

- A. Given that the comp exams are the course's final 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. Prepare as you normally would for the final exam using TAs and other course support, as permitted by the course's policies.

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 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.