

## M.S. / Ph.D. Degree Planner: Applied Physics—Electronic Devices & Materials (EC76) 2021-2022

- ❖ Minimum of 12 units (Plan I) or 14 units (Plan II) must be 201+ ECE courses that must count towards your degree.
- ❖ All courses counted towards the degree must be taken for a letter grade, with the exception of research units.
- ❖ Students **CANNOT** repeat a course unless they earned a D, F, U, or W grade. If you'd like to repeat a course, please submit the [online form](#). More information about how to repeat a course can be found [here](#).
- ❖ Note that **ONLY** 100+ courses will count towards your overall GPA.
- ❖ Must meet the Academic Residency requirement. More detailed info can be found [here](#).

### Core Coursework (12 Units):

ECE 230A-B-C	Solid State Electronics I, II, III
--------------	------------------------------------

Quarter/Core Course	
	ECE 230A
	ECE 230B
	ECE 230C
<b>Total: 12 Units</b>	

### Any two of the following 12 unit sequences (24 units):

ECE 212AN-BN-CN*	Principles of NanoScience & NanoTechnology, NanoElectronics, NanoPhotonics
ECE 222A-B-C	Antennas & Their System Applications, Applied Electromagnetic Theory- Electromagnetics, Computational Methods for Electromagnetics
ECE 236A-B-C	III-IV Compound Semiconductor Materials, Optical Processes in Semiconductors, Heterojunction Field Effect Transistors
ECE 238A-B, MATS 201C	Thermodynamics of Solids, Solid State Diffusion & Reaction Kinetics, Phase Transformations
ECE 240A-B-C	Laser & Optics, Optical Information Processing, Optical Modulation & Detection
ECE 251A-B-C-D**	Digital Signal Processing I & II, Filter Banks & wavelets, Array Processing
ECE 260A-B-C	VLSI Digital System Algorithms & Architectures, Integrated Circuits & Systems Design, Advanced Topics
MATH 210A-B-C	Mathematical Methods in Physics & Engineering
PHYS 211A, 212A-B	Solid-State Physics I, Quantum Mechanics I & II

Quarter/Add. Units	
<b>Total: 24 Units</b>	

\*Students cannot receive credit for both ECE 212A & 212AN, 212B & 212BN or 212C & 212CN

\*\*Students may choose any three of the four courses listed for ECE 251

### Technical Electives (12 Units)

- ❖ Any 4 unit, 200+ course from ECE, CSE, MAE, BENG, CENG, NANO, SE, MATS, MATH, or PHYS taken for a letter grade may be counted. Exceptions to this list require departmental approval.
- ❖ Up to 12 units of undergraduate ECE coursework (ECE 111+ only\*) OR up to two 4-unit course of undergraduate ECE coursework (ECE 111+ only\*) and one 4-unit course of CSE undergraduate coursework (CSE 100+ only\*\*) may be counted.
- ❖ MS students (Plan II) are allowed no more than 4 units of any Jacobs School of Engineering Research units as technical electives. PhD and MS students (Plan I) are allowed no more than 8 units of research as technical electives.
  - ECE 299, CSE 298/299, MAE 299, BENG 299, NANO 299, SE 299
- ❖ All courses counted towards the degree must be taken for a letter grade.
  - \* Not including ECE 195, 197, 198, 199, 210 298
  - \*\* Not including CSE 123, 140, 140L, or 143

Quarter/Tech. Electives	
<b>Total: 12 Units</b>	

Curriculum Advisor: Shadi Dayeh [✉ sdayeh@ucsd.edu](mailto:sdayeh@ucsd.edu) [📞](https://www.whatsapp.com/channel/00299875500000000000) (858)-534-5171

**Curriculum/Faculty Advisor:** Advises M.S. students regarding course selection; Considers any exception requests requiring faculty approval (such as course substitutions); Sign forms; Technical engineering related questions & job advice- **PLEASE CONTACT YOUR STAFF ADVISOR FOR ALL OTHER ISSUES.**