

## M.S. / Ph.D. Degree Planner: Nanoscale Devices & Systems (EC86) 2020-2021

- ❖ 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.

### Core Coursework (12 Units):

ECE 212AN	Principles of Nanoscience & Nanotechnology
ECE 212BN	Nanoelectronics
ECE 212CN	Nanophotonics

Quarter/Core Course	
	ECE 212AN
	ECE 212BN
	ECE 212CN
<b>Total: 12 Units</b>	

### Additional Coursework (12 units) 3 courses from the same group:

ECE 222A-B-C	Antennas & Their System Applications, Applied Electromagnetic Theory - Electromagnetics & Computational Methods for Electromagnetics
ECE 230A-B-C	Solid State Electronics I, II, III
ECE 236A-B-C ECE 235	III-V Compound Semiconductor Materials, Optical Processes in Semiconductors, Heterojunction Field-Effect Transistors, Nanometer-Scale VLSI Devices
ECE 240A-B-C	Lasers & Optics, Optical Information Processing, Optical Modulation & Detection
ECE 247A-B-C, ECE 201, 202, 203	Advanced BioPhotonics, BioElectronics, BioNanotechnology, Intro to Biophysics, Medical Devices & Interfaces, Biomedical Integrated Circuits & Systems
MATH 210A-B-C, ECE 250, ECE 269	Mathematical Methods in Physics & Engineering, Random Processes, Linear Algebra & Application
PHYS 211A PHYS 212A-B	Solid State Physics, Quantum Mechanics I, II

Quarter/Add. Units	
<b>Total: 12 Units</b>	

### Technical Electives (24 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
- ❖ With the exception of research units, all courses counted towards the degree must be taken for a letter grade.

\* Not including ECE 195, 197, 198, 199, or 298.

\*\* Not including CSE 123A, 140, 140L, or 143

Quarter/Tech. Electives	
<b>Total: 24 Units</b>	

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**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.**