# COURSE REQUIREMENTS

## Core Coursework (twelve units)

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ECE 212 AN</td>
<td>Principles of Nanoscience and Nanotechnology</td>
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<tr>
<td>ECE 212 BN</td>
<td>Nanoelectronics</td>
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<td>ECE 212 CN</td>
<td>Nanophotonics</td>
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**Total: 12 Units**

## Additional Coursework: Students are to take three courses from the same group (twelve units)

- **ECE 222 A,B,C** Antennas and Their System Applications, Applied Electromagnetic Theory - Electromagnetics and Computational Methods for Electromagnetics
- **ECE 230 A,B,C** Solid State Electronics I, II and III
- **ECE 236 A,B,C, ECE 235** III-V Compound Semiconductor Materials, Optical Processes in Semiconductors, Heterojunction Field Effect Transistors, Heterojunction Bipolar Transistors, Nanometer-Scale VLSI Devices
- **ECE 240 A,B,C** Lasers and Optics, Optical Information Processing, Optical Modulation and Detection Advanced
- **ECE 247 A,B,C, ECE 201, ECE 202, ECE 203** BioPhotonics, BioElectronics, BioNanotechnology Introduction to Biophysics, Medical Devices and Interfaces, Biomedical Circuits and Systems
- **MATH 210 A,B,C, ECE 250, ECE269** Mathematical Methods in Physics and Engineering, Random Processes, Linear Algebra
- **PHYS 211 A, PHYS 212 A-B** Solid State Physics, Quantum Mechanics

**Total: 12 Units**

## Technical Electives (twenty-four units)

- **With the exception of research units, all courses counted towards the degree must be taken for a letter grade.**
- **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 two 4-unit courses of undergraduate ECE coursework (ECE 111+ only) and one 4-unit course of undergraduate CSE coursework (CSE 100+ only).**
- **M.S. Students (Plan II) are allowed no more than 4 units of 299 as technical electives. Ph.D. and M.S. Students (Plan I) are allowed no more than 8 units of 299 as technical electives.**

**Total: 24 Units**

## Technical Electives

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**Curriculum Advisor:** Boubacar Kante  
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