**Required Core Courses**

- Required of all students. A 2.0 cumulative GPA is required in core courses in order to receive a degree in the major.
- ECE 109 - Introduction to Electrical Engineering (3) and
- ECE 109L - Introduction to Electrical Engineering Laboratory (1)
- ECE 114 - C for Engineers (3) and
- ECE 114L - Programming Laboratory for Engineers (1)
- ECE 204 - Introduction to Digital Logic Design (4) and
- ECE 204L - Introduction to Digital Logic Design Laboratory (1)
- ECE 205 - Digital Circuit Design Using Verilog (3) and
- ECE 205L - Digital Circuit Design Using Verilog Laboratory (1)
- ECE 207 - Network Analysis I (3) and
- ECE 207L - Network Analysis I Laboratory (1)
- ECE 209 - Network Analysis II (3) and
- ECE 209L - Network Analysis II Laboratory (1)
- ECE 220 - Electronic Devices and Circuits (4) and
- ECE 220L - Electronics Laboratory (1)
- ECE 256 - Object Oriented Programming (4) or
- ECE 257 - Programming for Engineering Applications (4)
- ECE 302 - Electromagnetic Fields (4)
- ECE 306 - Discrete Time Signals and Systems (4) and
- ECE 306L - Discrete Time Signals and Systems Laboratory (1)
- ECE 307 - Network Analysis III (3)
- ECE 309 - Control Systems Engineering (4) and
- ECE 309L - Control Systems Laboratory (1)
- ECE 310 - Introduction to Power Engineering (4) and
- ECE 310L - Power Engineering Laboratory (1)
- ECE 315 - Probability, Statistics, and Random Processes for Electrical and Computer Engineering (4)
- ECE 320 - Linear Active Circuit Design (3) and
- ECE 320L - Basic Active Circuit Laboratory (1)
- ECE 330 - Introduction to Semiconductor Devices (3)
- ECE 341 - Introduction to Microcontrollers (3) and
- ECE 341L - Introduction to Microcontrollers Laboratory (1)
- ECE 405 - Communications Systems (4) and
- ECE 405L - Communications Systems Laboratory (1)
- ECE 464 - Professional Topics for Engineers (1)
- ECE 467 - Team Project III (1)

**Total Units 78**

**Required Support Courses**

- The following major support courses should be used to satisfy the indicated GE requirements. If these courses are not used to satisfy GE, the total units to degree may be more than 194 units.
- CHM 121 - General Chemistry (3) and
- CHM 121L - General Chemistry Laboratory (1) (B3)
- or
- CHM 115 - General Chemistry for Engineers (4)
- EGR 481 - Project Design Principles and Applications (2) (B5) and
- EGR 482 - Project Design Principles and Applications (2) (B5)
- MAT 114 - Analytic Geometry and Calculus I (4) (B4)
- MAT 115 - Analytic Geometry and Calculus II (4) (B4)
- MAT 116 - Analytic Geometry and Calculus III (4) (B4)
- MAT 214 - Calculus of Several Variables I (3)
- MAT 215 - Calculus of Several Variables II (3)
- MAT 224 - Elementary Linear Algebra and Differential Equations (4)
- PHY 131 - General Physics (3) (B1) and
- PHY 131L - General Physics Laboratory (1) (B3)
- PHY 132 - General Physics (3) and
- PHY 132L - General Physics Laboratory (1)
- PHY 133 - General Physics (3) and
- PHY 133L - General Physics Laboratory (1)

**Total Units 42**

**Elective Core Courses**

- ECE Upper Division Electives (19)

12 of the 19 units must be 400 level courses. If a course has an associated lab, both must be taken.

**Total Units 19**

**Interdisciplinary General Education**

- An alternate pattern for partial fulfillment of GE Areas A, C, D, and E is available for students in the Interdisciplinary General Education (IGE) program. Students should see an advisor for specific GE coursework required by their major. Students must be exempt from or score at least 147 on the EPT to qualify for IGE. Please refer to the University Catalog General Education Program section for additional information.

**How IGE fulfills General Education Requirements:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Completion of IGE Courses</th>
<th>Satisfies GE Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>IGE 120, IGE 121, IGE 122</td>
<td>A2 as well as any 2 courses from C1-C3</td>
</tr>
<tr>
<td>Sophomore</td>
<td>IGE 220, IGE 221, IGE 222</td>
<td>D1 (8 units) and D3</td>
</tr>
<tr>
<td>Junior</td>
<td>IGE 223, IGE 224</td>
<td>D2 and Area E</td>
</tr>
</tbody>
</table>

**Total Units 32**

**General Education Requirements**

**Area A Communication & Critical Thinking (12 units)**
- Oral Communication
- Written Communication
- Critical Thinking

**Area B Mathematics & Natural Sciences (16 units)**
- Physical Science
- Biological Science
- Laboratory Activity
- Math/Quantitative Reasoning
- Science & Technology Synthesis

**Area C Humanities (16 units)**
- Visual and Performing Arts
- Philosophy and Civilization
- Literature and Foreign Language
- Humanities Synthesis

**Area D Social Sciences (20 units)**
- U.S. History, Constitution, American Ideals
  - a. United States History
  - b. Introduction to American Government
- History, Economics and Political Science
- Sociology, Anthropology, Ethnic & Gender Studies
- Social Science Synthesis

**Area E Lifelong Understanding & Self Development (4 units)**

**Total Units 68**

**American Institutions**

Courses that satisfy this requirement may also satisfy GE Area D1

**Total Units 8**

**American Cultural Perspectives Requirement**

Refer to the University Catalog General Education Program section for a list of courses that satisfy this requirement. Course may also satisfy major, minor, GE, or unrestricted elective requirements.

**Total Units 4**

All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the quarter following completion of 120 units for undergraduates.