

**Major Required Core 100 units**

ARO2041 - Engineering Statics (3) or  
 CE2041 - Engineering Statics (3)

CE2051 - Mechanics of Materials (3)  
 CE2061 - Fluid Mechanics (3)  
 CHE2301 - Process and Automation (2)  
 CHE2301L - Process and Automation Laboratory (1)  
 CHM1210 - General Chemistry I (3) (B1)  
 CHM1210L - General Chemistry Laboratory I (1) (B3)

EC2201 - Principles of Microeconomics (3) (D3) or  
 EC2202 - Principles of Macroeconomics (3) (D3)

EGR1000 - Engineering, Society, and You (2) (E)  
 EGR1000L - Engineering, Society, and You Laboratory (1) (E)  
 EGR4810 - Project Design Principles and Applications (1) (B5)  
 EGR4820 - Project Design Principles and Applications (1) (B5)  
 EGR4830 - Project Design Principles and Applications (1) (B5)  
 IE3921 - Principles of Lean Implementation (2)  
 IE4290 - Discrete System Simulation (2)  
 IE4290L - Discrete System Simulation Laboratory (1)  
 IME1130L - Industrial and Manufacturing Engineering Computations Laboratory (1)  
 IME2241 - Industrial and Manufacturing Engineering Fundamentals (2)  
 IME2241L - Industrial and Manufacturing Engineering Fundamentals Laboratory (1)  
 IME2390 - Industrial Costs and Controls (2)  
 IME3140 - Engineering Probability and Statistics (3)  
 IME3261 - Production Planning and Control (3)  
 IME3311 - Facilities Planning, Layout and Design (3)  
 IME4020 - Ethical Concepts in Technology and Applied Science (3) (B5 or C3)  
 IME4030 - Fiscal Implications in Technical Decision Making (3) (B5 or D4)  
 IME4150 - Statistical Quality Control (2)  
 IME4150L - Statistical Quality Control Laboratory (1)  
 MAT1140 - Calculus I (4) (B4)  
 MAT1150 - Calculus II (4) (B4)  
 MAT2140 - Calculus III (4)  
 MAT2240 - Elementary Linear Algebra and Differential Equations (3)  
 MFE2171 - Manufacturing Processes-Materials, Metrology and Treatments (2)  
 MFE2171L - Manufacturing Processes-Materials, Metrology and Treatments Laboratory (1)  
 MFE2211 - Manufacturing Processes- Casting, Forming, Joining, Metal Removal (3)  
 MFE2211L - Manufacturing Processes- Casting, Forming, Joining, Metal Removal Laboratory (1)  
 MFE2261 - Engineering Graphics I (2)  
 MFE2261L - Engineering Graphics Laboratory (1)  
 MFE2501 - Numerical Control and CAM (3)  
 MFE2501L - Numerical Control and CAM Laboratory (1)  
 MFE3221L - Manufacturing Metrology Laboratory (1)  
 MFE3260 - Design for Manufacturing (1)  
 MFE3260L - Design for Manufacturing Laboratory (1)  
 MFE4501 - Introduction to Computer Integrated Manufacturing and Automation (2)  
 MFE4501L - Introduction to Computer Integrated Manufacturing and Automation Laboratory (1)  
 MFE4650 - Metal Working Theory and Applications (3)  
 PHY1510 - Introduction to Newtonian Mechanics (3) (B1)  
 PHY1510L - Newtonian Mechanics Laboratory (1) (B3)  
 PHY1520 - Introduction to Electromagnetism and Circuits (3)  
 PHY1520L - Introductory Laboratory on Electromagnetism and Circuits (1)

**Major Electives 5 units**

Select 5 units from the following list:

IE2250 - Fundamentals of Human Factors Engineering (2)  
 IE2250L - Fundamentals of Human Factors Engineering Laboratory (1)  
 IE4160 - Operations Research I (3)  
 IE4170 - Operations Research II (3)  
 IE4190 - Reliability Concepts and techniques (2)  
 IME4350 - Design of Experiments (2)  
 IME4350L - Design of Experiments Laboratory (1)  
 MFE3341 - Net Shape Engineering (2)  
 MFE3341L - Net Shape Engineering Laboratory (1)  
 MFE4060 - Safety Engineering (2)  
 MFE4380 - Plastics Engineering (2)  
 MFE4380L - Plastics Engineering Laboratory (1)  
 MFE4391 - Composites Manufacturing (2)

**General Education Requirements 48 Units**

Students should consult the Academic Programs website  
<https://www.cpp.edu/~academic-programs/general-education-course-listings.shtml>  
 for current information regarding this requirement. Unless specific courses are required, please refer to the list of approved courses under General Education Requirements, Areas A through E.

**Area A. English Language Communication and Critical Thinking (9 units)**

1. Oral Communication
2. Written Communication
3. Critical Thinking (Satisfied by completion of undergraduate Engineering degree)

**Area B. Scientific Inquiry and Quantitative Reasoning (12 units)**

1. Physical Sciences
2. Life Sciences
3. Laboratory Activity
4. Mathematics/Quantitative Reasoning
5. Science and Technology Synthesis

**Area C. Arts and Humanities (12 units)**

1. Visual and Performing Arts
- 2a. Philosophy and Civilization
- 2b. Literature and Language Other than English
3. Arts and Humanities Synthesis

**Area D. Social Sciences (12 units)**

1. U.S. History and American Ideals
2. U.S. Constitution and California Government
3. Social Sciences: Principles, Methodologies, Value Systems, and Ethics
4. Social Science Synthesis

**Area E. Lifelong Learning and Self-Development (3 units)**

**Interdisciplinary General Education 21 Units**

An alternate pattern for partial fulfillment of GE Areas A, C, and D available for students is the Interdisciplinary General Education (IGE) program. Students should see an advisor for specific GE coursework required by their major. Please refer to the University Catalog General Education Program section for additional information.

**How IGE fulfills General Education Requirements:**

<b>Year</b>	<b>Completion of IGE Courses</b>	<b>Satisfies GE Requirements</b>
<i>Freshman</i>	<i>IGE 1100, IGE 1200</i>	<i>A2 and C2b</i>
<i>Sophomore</i>	<i>IGE 2100, IGE 2200</i>	<i>C1 and C2a</i>
<i>Junior</i>	<i>IGE 2300, IGE 2400</i>	<i>D1 and D3</i>
<i>Senior</i>	<i>IGE 3100</i>	<i>C3 or D4</i>

**American Institutions 6 Units**

Courses that satisfy this requirement may also satisfy GE Area D1 and D2.

**American Cultural Perspectives Requirement 3 Units**

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.

**Graduation Writing Test**

All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the semester following completion of 60 units for undergraduates.