CAL POLY POMONA

Name:
Plan: **Chemical Engineering, B.S.**
SubPlan/Option:
Min. Units Required: **127 units**

2018-2019 University Catalog
Degree Curriculum Sheet

Major Required Core — 89 units

CHE1311 - Introduction to Chemical Engineering (1)
CHE1321 - Chemical and Materials Engineering Analysis (1)
CHE1411L - Introduction to Chemical Engineering Laboratory (1)
CHE1421L - Chemical and Materials Engineering Analysis Laboratory (1)
CHE2011 - Material and Energy Balances I (2)
CHE2021 - Material and Energy Balances II (2)
CHE2301 - Process and Automation (2)
CHE2301L - Process and Automation Laboratory (1)
CHE2851 - Applied Mathematics in Chemical and Materials Engineering (2)
CHE3021 - Chemical Engineering Thermodynamics I (3)
CHE3031 - Chemical Engineering Thermodynamics II (2)
CHE3040 - Kinetics & Reactor Design (3)
CHE3111 - Transport Phenomena I (4)
CHE3121 - Transport Phenomena II (3)
CHE3221L - Transport Laboratory I (1)
CHE3331L - Transport Laboratory II (1)
CHE4251 - Unit Operations and Pollution Abatement (2)
CHE4260 - Process Controls (2)
CHE4361L - Unit Operation and Process Control Laboratory (1)
CHE4450 - Chemical Process Synthesis and Design I (3)
CHE4450L - Chemical Process Synthesis and Design I Laboratory (1)
CHE4451 - Chemical Process Synthesis and Design II (3)
CHE4451L - Chemical Process Synthesis and Design II Laboratory (1)
CHE4631 - Undergraduate Research Project (1)
CHE4801A - Professional Development and Case Studies in Chemical and Materials Engineering Activity (1)
CHM1210 - General Chemistry I (3) (B1)
CHM1210L - General Chemistry Laboratory I (1) (B3)
CHM1220 - General Chemistry II (3) (B1)
CHM1220L - General Chemistry Laboratory II (1) (B3)
CHM2010 - Elements of Organic Chemistry (3)
CHM2010L - Elements of Organic Chemistry Laboratory (1)
EGR4810 - Project Design Principles and Applications (1) (B5)
EGR4820 - Project Design Principles and Applications (1) (B5)
EGR4830 - Project Design Principles and Applications (1) (B5)
MAT1140 - Calculus I (4) (B4)
MAT1150 - Calculus II (4) (B4)
MAT2140 - Calculus III (4)
MAT2240 - Elementary Linear Algebra and Differential Equations (3)
MTE2070 - Materials Science and Engineering (2)
MTE3170L - Materials Science and Engineering Laboratory (1)
MTE4010 - Corrosion And Materials Degradation (2)
MTE4010L - Corrosion And Materials Degradation Laboratory (1)
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 — 3 units

Select 3 units from the following list:

CHE4321 - Chemical Safety and Hazardous Materials Management (3)
CHE4990 - Special Topics for Upper Division Students (1-3)
MTE3030 - Polymer Materials (2)
MTE3030L - Polymer Materials Laboratory (1)
MTE3200 - Mechanical Metallurgy (2)
MTE3200L - Mechanical Metallurgy Laboratory (1)
MTE3270 - Advanced Science of Materials (2)
MTE3270L - Advanced Science of Materials Laboratory (1)
MTE3280 - Thermodynamics of Materials (3)
MTE3371 - Joining of Materials (2)
MTE3371L - Joining of Materials Laboratory (1)
MTE3381 - Kinetic Processes in Materials (3)
MTE4000 - Special Study for Upper Division Students (1-3)
MTE4040 - Electronic Materials (3)
MTE4050 - Physical Metallurgy - Mechanical Properties (3)
MTE4060 - Physical Metallurgy - Solidification and Strengthening Reactions (2)
MTE4060L - Physical Metallurgy Solidification and Strengthening Reactions Laboratory (1)
MTE4070 - Ceramic Materials (2)
MTE4070L - Ceramic Materials Laboratory (1)
MTE4080 - Composite Materials (2)
MTE4080L - Composite Materials Laboratory (1)
MTE4201 - Materials Selection and Design I (1)
MTE4201L - Materials Selection and Design I Laboratory (1)
MTE4210 - Materials Characterization and Testing (3)
MTE4220 - Fracture and Failure Analysis (3)
MTE4301 - Materials Selection and Design II (2)
MTE4301L - Materials Selection and Design II Laboratory (1)
MTE4990 - Special Topics for Upper Division Students (1-3)

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:

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

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.

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)