Cal Poly Pomona

Name:

Plan: **Civil Engineering, B.S.**

SubPlan/Option: **General Civil Engineering**

Min. Units Required: **126 units**

2019-2020 University Catalog
Degree Curriculum Sheet

Major Required — 58 units

CE1001 - Civil Engineering (1)
CE1001L - Civil Engineering Laboratory (1)
CE1011 - Surveying Engineering (3)
CE1011L - Surveying Engineering Laboratory (1)
CE2011 - Technical Communications (3)
CE2030 - Civil Engineering Materials (2)
CE2030L - Civil Engineering Materials Laboratory (1)
CE2041 - Engineering Statics (3)
CE2051 - Mechanics of Materials (3)
CE2061 - Fluid Mechanics (3)
CE2070 - Computer Programming and Numerical Methods (3)
CHM1210 - General Chemistry I (3) (B1)
CHM1210L - General Chemistry Laboratory I (1) (B3)
EGR4810 - Project Design Principles and Applications (1) (B5)
EGR4820 - Project Design Principles and Applications (1) (B5)
EGR4830 - Project Design Principles and Applications (1) (B5)
GSC3210 - Engineering Geology I (2) (B5)
GSC3210L - Engineering Geology I Laboratory (1) (B5)
IME3011 - App. of Stats in Engineering (2)
IME4020 - Ethical Concepts in Technology and Applied Science (3) (B5 or C3)
MAT1140 - Calculus I (4) (B4)
MAT1150 - Calculus II (4) (B4)
MAT2140 - Calculus III (4)
MAT2240 - Elementary Linear Algebra and Differential Equations (3)
PHY1510 - Introduction to Newtonian Mechanics (3) (B1)
PHY1510L - Newtonian Mechanics Laboratory (1) (B3)

Subplan/Option Required — 22 units

CE2021 - Infrastructure Economics and Public Policy (3)
CE3401 - Geotechnical Engineering (3)
CE3401L - Geotechnical Engineering Laboratory (1)
CE3501 - Structural Analysis I (3)
CE3501L - Structural Design Laboratory (1)
CE3601 - Transportation Engineering (3)
CE3601L - Transportation Engineering Laboratory (1)
EGR4050 - Role of Design Professionals In Society (3) (D4)
PHY1520 - Introduction to Electromagnetism and Circuits (3) (B1)
PHY1520L - Introductory Laboratory on Electromagnetism and Circuits (1) (B3)

Subplan/Option Electives — 17 units

Select 17 units from the following three lists:

List One (select 3 units from the following courses):
CE3101 - Construction Engineering (2)
CE3101L - Construction Engineering Laboratory (1)
CE3201 - Environmental Engineering (3)
CE3201L - Environmental Engineering Laboratory (1)
CE3211 - Water Resources Engineering (3)
CE3301 - Engineering Geomatics (3)

List Two (select 6 units from the following courses):
CE4400 - Foundation and Retaining Wall Design (3)
CE4510 - Structural Design - Reinforced Concrete (3)
CE4811 - Design of Transportation Facilities (3)
CE4811L - Design of Transportation Facilities Laboratory (1)

List Three (select 8 units from the following courses):
CE3121 - Building Systems (2)
CE3140 - Construction Estimating (3)
CE3150 - Construction Equipment and Safety (3)
CE3510 - Structural Analysis II (3)
CE3510L - Structural Testing Laboratory (1)
CE4031 - Sustainable Buildings and Infrastructure (3)
CE4120 - Construction Scheduling (2)
CE4130 - Construction Contracts (3)
CE4140 - Construction Project Management and Accounting (3)
CE4171 - Virtual Design Construction and Management - BIM (2)
CE4171L - Virtual Design Construction and Management - BIM Laboratory (1)
CE4201 - Water and Wastewater Engineering (3)
CE4201L - Water and Wastewater Engineering Laboratory (1)
CE4211 - Applied Hydrology (3)
CE4220 - Solid and Hazardous Waste Engineering (3)
CE4220L - Solid and Hazardous Waste Engineering Laboratory (1)
CE4231 - Water Reclamation and Desalination (3)
CE4241 - Environmental Remediation (3)
CE4261 - Air Quality Engineering (3)
CE4271 - Unit Operations and Processes in Environmental Engineering (3)
CE4281 - River Mechanics (3)
CE4301 - Digital Mapping (2)
CE4301L - Digital Mapping Laboratory (1)
CE4321 - Subdivision Engineering and Land Survey Descriptions (3)
CE4321L - Subdivision Engineering and Land Survey Descriptions Laboratory (1)
CE4331 - GIS Applications in Engineering and Remote Sensing (2)
CE4331L - GIS Applications in Engineering and Remote Sensing Laboratory (1)
CE4341 - Satellite Surveying in Engineering (2)
CE4341L - Satellite Surveying in Engineering Laboratory (1)
CE4350 - Photogrammetry (2)
CE4350L - Photogrammetry Laboratory (1)
CE4451 - Pavement Design and Construction (3)
CE4461 - Rock Mechanics (3)
CE4470 - Slope Stability and Earth Dams (3)
CE4520 - Masonry Design (3)
CE4530 - Structural Design - Timber (2)
CE4530L - Structural Design-Timber Laboratory (1)
CE4540 - Bridge Design (3)
CE4560 - Structural Design - Steel (3)
CE4571 - Introduction to Earthquake Engineering and Structural Dynamics (3)
CE4580 - Architectural Engineering Interdisciplinary Design -Timber (1)
CE4580L - Architectural Engineering Interdisciplinary Design-Timber Laboratory (2)
CE4590 - Architectural Engineering Interdisciplinary Design - Precast Concrete (1)
CE4590L - Architectural Engineering Interdisciplinary Design - Precast Concrete Laboratory (2)
CE4631 - Transportation Systems Design and Operation (3)
CE4640 - Transportation Planning and Management (3)
CE4640L - Transportation Planning and Management Laboratory (1)
CE4671 - Intelligent Transportation Systems (3)
CE4681 - Multimodal Traffic Analysis (3)
CE4690 - Traffic Engineering (3)
CE4690L - Traffic Engineering Laboratory (1)
EGR3321 - CA Boundary Law and Public Lands (3) (D4)
EGR3321A - CA Boundary Law and Public Lands Activity (1)

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)

At least 3 units from each sub-area

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)

At least 3 units from B1, B2, B4, and B5 including 1 unit of lab from B1 or B2 to fulfill B3

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)

At least 3 units from each sub-area and 3 additional units from sub-areas 1 and/or 2

1. Visual and Performing Arts
2. Literature, Modern Languages, Philosophy and Civilization
3. Arts and Humanities Synthesis

Area D. Social Sciences (12 units)

At least 3 units from each sub-area

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:

Year	*Completion of IGE Courses*	*Satisfies GE Requirements*
First	*IGE 1100, IGE 1200*	*A2 and C2*
Second/Third	*IGE 2100, IGE 2200*	*C1 and C2*
	IGE 2300, IGE 2400	*D1 and D3*
Third/Fourth	*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.