



Curriculum for B.S. Degree in Civil Engineering (194 *or* 195 units)

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

(Effective Fall 2005)

Lower Division General Education Requirements (32 units)

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| ENGL 101 | Composition I: Reflective and Expository Writing (4) |
| COMM 150 | Oral Communication (4) |
| HIST 202A <i>or</i> 202B | United States Civilization (4) |
| POLS 150 | Government and American Society (4) |
| BLOCK C – Humanities | 3 courses from 3 different areas (12) |
| BLOCK E – Lifelong Understanding and Self-Development | 1 course (4) |

University Requirement (4 units)

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| ENGL 102 | Composition II: Analytical and Persuasive Writing (4) |
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Lower Division Major Requirements (76 *or* 77 units)

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| ENGR 100 | Introduction to Engineering (1) <i>Prerequisites: None</i> |
| CE/ME 201 | Statics (4) <i>Prerequisites: Math 207, Phys 211</i> |
| EE 204 | Circuit Analysis I (4) <i>Math 208, Phys 213</i> |
| CE/ME 205 | Strength of Materials I (4) <i>Prerequisites: CE/ME 201</i> |
| ENGR 207 | Materials Science and Engineering (4) <i>Prerequisites: Chem. 101, Math 206, Phys 211</i> |
| CE/ME 210 | Matrix Algebra for Engineers (2) <i>Prerequisites: Math 208, Phys 211</i> |
| CE/ME 211 | Statistics and Probability for Engineers (2) <i>Prerequisites: Math 208, Phys 211</i> |
| CS 290* | Introduction to FORTRAN Programming (2) <i>Prerequisites: Math 206</i> |
| CE 190 | Introduction to CAD (1) <i>Prerequisites: Math 103, Tech 110</i> |
| CE 195 | Civil Engineering Design I (4) <i>Prerequisites: CE 190, 202, Phys 211</i> |
| CE 202 | Plane Surveying (4) <i>Prerequisites: Math 103</i> |
| CE 290 | Numerical Methods for Engineers (3) <i>Prerequisites: CE/ME 210</i> |
| CHEM 101 | General Chemistry I (5) <i>Prerequisites: HS Phys. & Chem.: Placement Exam</i> |
| MATH 206 | Calculus I: Differentiation (4) <i>Prerequisites: ELM: Math 102, 103 both with min. C grade</i> |
| MATH 207 | Calculus II: Integration (4) <i>Prerequisites: Math 206 with minimum C grade</i> |
| MATH 208 | Calculus III: Sequences, Series, and Coordinate Systems (4) <i>Prerequisites: Math 207 w/min C</i> |
| MATH 209 | Calculus IV: Several Variables (4) <i>Prerequisites: Math 208 with minimum of C grade</i> |
| MATH 215 | Differential Equations (4) <i>Prerequisites: Math 209 with minimum of C grade</i> |
| PHYS 211 | Mechanics (5) <i>Prerequisites: High School PHYS; MATH 206 (concurrently)</i> |
| PHYS 212 | Waves, Optics & Thermodynamics (5) <i>Prerequisites: PHYS 211; MATH 207 (concurrently)</i> |
| PHYS 213 | Electricity and Magnetism (5) <i>Prerequisites: PHYS 212; MATH 208 (concurrently)</i> |

*May substitute a course in any high-level programming language with department approval.

Upper Division Major Requirements (53 units)

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| ENGR 300 | Economics for Engineers (4) <i>Prerequisites: Junior/Senior Standing in Engineering</i> |
| ENGR 301 | Ethics and Professionalism in Engineering (1) <i>Prerequisites: Junior/Senior Standing in</i> |
| CE 306 | Communication for Civil Engineers (3) <i>Prerequisites: Comm. 150, WPE</i> |
| ME 326A | Thermodynamics I (4) <i>Prerequisites: Math 208, Phys 212</i> |
| CE/ME 303 | Fluid Mechanics I (4) <i>Prerequisites: Phys 212</i> |
| CE/ME 312 | Strength of Materials Laboratory I (1) <i>Prerequisites: CE/ME 205</i> |
| CE/ME 313 | Fluid Mechanics Laboratory I (1) <i>Prerequisites: CE/ME 303</i> |
| CE/ME 320 | Dynamics (4) <i>Prerequisites: CE/ME 201</i> |
| CE 360 | Structural Mechanics I (4) <i>Prerequisites: CE/ME 205</i> |
| CE 361 | Introduction to Structural Design I (4) <i>Prerequisites: CE 360</i> |
| CE 364 | Concrete Laboratory (1) <i>Prerequisites: CE 361, CE/ME 312</i> |

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| CE 366 | Soil Mechanics I (4) <i>Prerequisites: CE/ME 205, CE/ME 303</i> |
| CE 368 | Soil Mechanics Laboratory (1) <i>Prerequisites: CE 366, CE/ME 312</i> |
| CE 370 | Transportation Engineering (4) <i>Prerequisites: CE 202, CE/ME 210, 211</i> |
| CE 384 | Introduction to Environmental Engineering (4) <i>Prerequisites: CE/ME 303, Chem. 101</i> |
| CE 386 | Design of Water Resources Systems (4) <i>Prerequisites: CE/ME 303</i> |
| CE 496A | Civil Engineering Design Project I (3) <i>Prerequisites: CE 306, 361, 366, 370, 384, 386, Engr 300, 301</i> |
| CE 496B | Civil Engineering Design Project II (2) <i>Prerequisites: CE 496A</i> |

Upper Division Technical Electives (17 units)

Select 2 courses from design electives, 2 courses from design or lecture electives, and 1 laboratory elective.

Design Electives:

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| CE 461 | Design of Steel Structures (4) <i>Prerequisites: CE 360, 361</i> |
| CE 462 | Reinforced Concrete Design I (4) <i>Prerequisites: CE 360, 361</i> |
| CE 463 | Timber and Masonry Design (4) <i>Prerequisites: CE 360, 361</i> |
| CE 465 | Seismic Design (4) <i>Prerequisites: CE 460, 461, or 462</i> |
| CE 467 | Foundations I (4) <i>Prerequisites: CE 366</i> |
| CE 471 | Highway Engineering (4) <i>Prerequisites: CE 202, 370</i> |
| CE 472 | Highway and Airport Pavement Design (4) <i>Prerequisites: CE 368, 370</i> |

Lecture Electives:

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| CE 365 | Specifications and Cost Estimating (4) <i>Prerequisites: Senior Standing</i> |
| CE 387 | Hydraulics I (4) <i>Prerequisites: CE/ME 303</i> |
| CE 402 | Strength of Materials II (4) <i>Prerequisites: CE/ME 205, Math 215</i> |
| CE 460 | Structural Mechanics II (4) <i>Prerequisites: CE 360</i> |
| CE 474 | Traffic Engineering (4) <i>Prerequisites: CE 370</i> |
| CE 475 | Advanced Surveying (4) <i>Prerequisites: CE 202</i> |
| CE 483 | Hydrology I (4) <i>Prerequisites: CE/ME 303</i> |
| CE 484 | Sewerage and Sewage Treatment (4) <i>Prerequisites: CE 384</i> |
| CE 485 | Water Supply (4) <i>Prerequisites: CE/ME 303</i> |
| CE 486 | Ground Water Contamination and Remediation (4) <i>Prerequisites: CE 384</i> |

Laboratory Electives:

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| CE 372 | Asphaltic Materials Laboratory (1) <i>Prerequisites: CE/ME 312</i> |
| CE 381 | Computer Aided Design Laboratory (1) <i>Prerequisites: CE 303, 361, 370</i> |
| CE 413 | Fluid Mechanics Laboratory II (1) <i>Prerequisites: CE/ME 313, CE 387 or ME 408</i> |
| CE 473 | Pavement Design Laboratory (1) <i>Prerequisites: CE/ME 312</i> |
| CE 499 | Undergraduate Directed Study (1) <i>Prerequisites: Consent of Sponsor</i> |
| ME 412 | Strength of Materials Laboratory II (1) <i>Prerequisites: CE/ME 312. CE 360, ME 323</i> |

General Education Upper Division Theme (12 units)

UPPER DIVISION GE THEME 3 courses (12)

Notes:

1. Engl 102 is required for all students who are subject to the 1993-95 or later GE catalog requirements.
2. A minimum "C" grade average in general education is required for all students following the 1987-89 or any later catalog.
3. Effective Fall 1998, the Biology requirement can be met by successfully completing a biology course as part of the upper division theme or by completing GE Block B1.
4. Select two *diversity* courses from among all GE courses taken.
5. Must take the *Writing Proficiency Examination (WPE)* prior to completing 135-quarter units.
6. Engineering students must complete the Introduction to Higher Education requirement, Engr 100, within their first two quarters at CSULA. MESA/MEP students must take the ENGR 154 sequence.