

2006-2008 BS CE Curriculum

CIVIL ENGINEERING SUMMARY - BASIC/MAJOR/OTHER

Basic Sequence Courses*

Chemistry 301, 302; Civil Engineering 301, 311K, 311S, 314K, 319F; Engineering Mechanics 306, 311M, 319; Mathematics 408C, 408D; Mechanical Engineering 210; Physics 303K, 303L, 103M, 103N; Rhetoric & Writing 306.....51

Major Sequence Courses

Architectural Engineering 323K, Civil Engineering 321, 329, 341, 356, 357 (CE Base Level Courses 1-6).....18

Civil Engineering

333T.....3

Civil Engineering Level I Electives.....15

Civil Engineering Level II Elective.....3

Other Required Courses**

English 316K, Mathematics 427K, Mechanical Engineering 320.....10

Approved mathematics or science elective.....3

Approved mathematics, science, or engineering science elective.....3

American government ,including Texas government (legislative requirement).....6

American history (legislative requirement).....6

Approved fine arts or humanities elective.....3

Approved social science elective.....3

Minimum Required.....124

*Basic sequence courses must be completed before entrance into the major sequence. Students must apply for Major or Conditional sequence on the College of Engineering web site by the published deadlines – October 1st for priority consideration for a Spring semester; March 1 for Summer and Fall semesters. Conditional sequence may be granted if no more than 2 basic sequence courses (or 7 hours) are lacking in the basic sequence.

Conditional sequence allows registration in major sequence courses, along with the last remaining basic sequence courses. To be admitted to Major or Conditional sequence, a 2.0 overall, basic sequence, major, and engineering GPA is required for Architectural and Civil Engineering majors. A student cannot be on academic or scholastic probation. There is an appeal process for ineligible students. See the COE web site for information.

**Other Required Courses may be taken at any point in the degree plan (while in basic or major sequence) as long as the prerequisites for the course have been satisfied.

Civil Engineering

Approved Mathematics or Science Electives

- BIO 311C Introductory Biology I
- CH 318M Organic Chemistry I (Engineering Majors)
- CH 310M Organic Chemistry I
- CH 353 Physical Chemistry I (Engineering Majors)
- *GEO 401 Physical Geology
- *GEO 303 Introduction to Geology
- *GEO 312K Geology of Engineering

***GEO 401, GEO 303, and GEO 312K are equivalent courses. Only one of these can be counted towards the degree.**

- M 427L Advanced Calculus for Applications II
- M 340L Matrices and Matrix Calculations
- M 372 Fourier Series and Boundary Value Problems
- M 374 Fourier and Laplace Transforms
- M 362K Probability I
- M 372K Partial Differential Equations and Applications

NOTE: Other selected courses in Chemistry, Biological Sciences, Geological Sciences, Mathematics, or Physics may be counted only with approval from the designated CAEE department Undergraduate Advisor. However, in no case will courses be counted that designate in the Undergraduate Catalog that they are for non-science majors; however, not all courses for science majors are acceptable either.

Frequently requested courses that are **NOT** acceptable as math/science electives are: AST 301 and AST 307; BIO 301M and BIO 304; GEO 305, GEO 307, and GEO 320L; M 311, M325K, and M 341 (formerly 311). This does not mean that any other courses in these departments are acceptable. The CAEE department Undergraduate Advisor MUST approve any course that is not on the approved list.

Civil Engineering

Approved Mathematics or Science or Engineering Science Electives

BIO 311C	Introductory Biology I
BIO 311D	Introductory Biology II
CH 318M	Organic Chemistry I (Engineering Majors)
CH 318N	Organic Chemistry II (Engineering Majors)
CH 310M	Organic Chemistry I
CH 310N	Organic Chemistry II
CH 353	Physical Chemistry I (Engineering Majors)
EE 331	Electric Circuits, Electronics and Machinery
EM 339	Advanced Strength of Materials
*GEO 401	Physical Geology
*GEO 303	Introduction to Geology
*GEO 312K	Geology of Engineering

***GEO 401, GEO 303, and GEO 312K are equivalent courses. Only one of these can be counted towards the degree.**

GEO 416M Sedimentary Rocks (prereq. GEO 312K, GEO 303, or GEO 401)

M 427L Advanced Calculus for Applications II
M 340L Matrices and Matrix Calculations
M 372 Fourier Series and Boundary Value Problems
M 374 Fourier and Laplace Transforms
M 362K Probability I
M 372K Partial Differential Equations and Applications

ME 339 Heat Transfer
ME 379M Topic: Fire Science

PHY 355 Modern Physics for Engineers

It may be possible to substitute other courses that are not on the above list if prior approval is received from the CAEE department Undergraduate Advisor.

Civil Engineering and Architectural Engineering

Social Science Elective

These U.T. Austin classes satisfy the social science requirement for three hours of credit in one of the following areas: anthropology, economics, geography, linguistics, psychology, or sociology. Courses other than those on the list may be approved by the designated CAEE department Undergraduate Advisor; approval must be obtained prior to taking the course. Some courses shown may require prerequisites normally not satisfied in Civil or Architectural Engineering; consult the Course Schedule or Undergraduate Catalog, or inquire at the department offering the course.

ANT 302	Cultural Anthropology
ANT 318L	Mexican American Culture
ANT 322M	Topics in Cultures of the World
ANT 324L	Topics in Anthropology
ANT 327C	Topics in American Cultures
ECO 304K	Introduction to Microeconomics
ECO 304L	Introduction to Macroeconomics (prereq. ECO 304K)
GRG 305	This Human World: An Introduction to Geography
GRG 315	The City: An Introduction to Urban Geography
GRG 324	Cultural Geography of North America
GRG 334	Conservation, Resources, and Technology
GRG 337	The Modern American City
LIN 306	Introduction to the Study of Language
LIN 325	Introduction to the Study of African American English
PSY 301	Introduction to Psychology
SOC 302	Introduction to the Study of Society
SOC 309	Chicanos in American Society
SOC 313K	Introduction to the Study of Religion
SOC 333K	Sociology of Gender
SOC 344	Racial & Ethnic Relations
SOC 346	The City and Urbanization

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Civil Engineering
Fine Arts/Humanities Elective

These U.T. Austin courses satisfy the fine arts/humanities requirement for three hours of credit in one of the following areas: archaeology, architecture, art (excluding studio art), classics, theatre/dance (excluding studio courses), fine arts, humanities, music (excluding instruments and ensemble), or philosophy (excluding courses in logic). Courses other than those appearing on the list may be approved by the designated CAEE department Undergraduate Advisor; approval must be obtained prior to taking the course. Some courses may require prerequisites normally not satisfied in Civil Engineering; see the Course Schedule, Undergraduate Catalog, or department offering the course.

ARC 308	Architecture and Society
ARC 318K	History of Architecture, Survey I
ARC 318L	History of Architecture, Survey II
ARH 301	Introduction to the Visual Arts
ARH 302	Survey of Ancient through Medieval Art
ARH 303	Survey of Renaissance through Modern Art
CC 301	Introduction to Ancient Greece
CC 302	Introduction to Ancient Rome
CC 302K	Introduction to Archaeological Studies II: Classical Archaeology
CC 303	Introduction to Classical Mythology
CC 305	Topics in Roman Civilization: Private Life <u>or</u> Caesar & Augustus
CC 306M	Introduction to Medical and Scientific Terminology
CC 307K	Topics in Archaeology
MUS 302L	An Introduction to Western Music
MUS 303M	Introduction to Traditional Musics in World Cultures
MUS 342	Area Studies in Ethnomusicology
PHL 301	Introduction to Philosophy
PHL 304	Contemporary Moral Problems
PHL 305	Introduction to Philosophy of Religion
PHL 310	Knowledge and Reality
PHL 318	Introduction to Ethics
PHL 325K	Ethical Theories
PHL 325L	Business, Ethics, and Public Policy
PHL 327	Contemporary Philosophy
T D 301	Introduction to Theatre
T D 317C	Theatre History through the 18th Century
T D 317D	Theatre History since the 18th Century

CIVIL ENGINEERING Level I & Level II ELECTIVES

The civil engineering curriculum does *not* require the students to declare a specific technical area option. However, for the guidance of students with particular interests, level I electives in civil engineering are listed in areas of specialization. The fifteen semester hours of level I electives must be chosen from the following civil engineering and architectural engineering courses; in special cases, with the written permission of the designated CAEE department Undergraduate Advisor and department Chair, this requirement may be relaxed, provided the student demonstrates in advance that the courses to be substituted for civil engineering or architectural engineering courses are part of a consistent educational plan. To provide a broad general background, at least one technical elective from each of *three* different areas of specialization must be included in each student's program.

To assure a background in design, each student must take at least one technical area option level II elective. Level II electives may be substituted for technical area option level I electives, but the requirement of a least one technical elective from each of three different areas of specialization still applies.

The following lists reflect current course offerings and are subject to change by the faculty. Current lists are available in the departmental undergraduate office.

LEVEL I ELECTIVES

Construction Engineering and Project Management

Architectural Engineering 350, Advanced CAD Procedures
Architectural Engineering 358, Cost Estimating in Building Construction
Architectural Engineering 366, Contracts, Liability, & Ethics

Construction Materials

Civil Engineering 351, Concrete Materials
Civil Engineering 366K, Design of Bituminous Mixtures

Environmental Engineering

Civil Engineering 342, Water & Wastewater Treatment Engr.
Civil Engineering 346, Solid Waste Engineering and Management
Civil Engineering 346K, Hazardous Waste Management
Civil Engineering 369L, Air Pollution Engineering
Civil Engineering 370K, Environmental Sampling and Analysis

Geotechnical Engineering

Civil Engineering 375, Earth Slopes and Retaining Structures

(List continues on next page)

Civil Engineering Level I & II Electives (cont'd)

Structures

Architectural Engineering 345K, Masonry Engineering
Architectural Engineering, 362L, Structural Design in Wood
Civil Engineering 331, Reinforced Concrete Design
Civil Engineering 335, Elements of Steel Design
Civil Engineering 363, Advanced Structural Analysis

Transportation

Civil Engineering 367P, Pavement Design and Performance
Civil Engineering 367T, Traffic Engineering

Water Resources

Civil Engineering 358, Introductory Ocean Engineering
Civil Engineering 374K, Hydrology
Civil Engineering 374L, Groundwater Hydrology

LEVEL II ELECTIVES (DESIGN)

Environmental Engineering

Civil Engineering 364, Design of Wastewater & Water Treatment Facilities

Geotechnical Engineering

Civil Engineering 360K, Foundation Engineering

Structures

Civil Engineering 362M, Advanced Reinforced Concrete Design
Civil Engineering 362N, Advanced Steel Design

Transportation

Civil Engineering 367, Highway Engineering
Civil Engineering 376, Airport Design

Water Resources

Civil Engineering 365K, Hydraulic Engineering Design