

## Prerequisite Requirements for Graduate Degrees in Civil Engineering

Name \_\_\_\_\_ Degree/Discipline \_\_\_\_\_

### Notes

1. Suggested course numbers are provided, but prerequisites may be fulfilled with equivalent courses taken at the undergraduate *or graduate* levels, either at UC Denver or at an equivalent institution.
2. A student with more than five (5) missing prerequisite courses can only be admitted provisionally. A student may request regular admission when no more than five (5) missing prerequisites remain.
3. A student may file a petition to the graduate admissions committee to have a prerequisite waived.
4. A student may complete no more than 9 credit hours of graduate work before completing all prerequisites.
5. Fulfillment of prerequisites, which requires a grade of C- or better, will be checked by the student's research advisor when the student applies for admission to candidacy prior to graduation.

### 1. Master of Science or Ph.D. in Civil Engineering

→ Check the following courses, plus the appropriate discipline-specific list below.

- \_\_\_\_\_ Calculus I (MATH-1401 or equivalent)
- \_\_\_\_\_ Calculus II (MATH-2411 or equivalent)
- \_\_\_\_\_ Calculus III (MATH-2421 or equivalent)
- \_\_\_\_\_ Linear Algebra and Differential Equations (MATH-3195 or equivalent)
- \_\_\_\_\_ Physics I (PHYS-2311 or equivalent)
- \_\_\_\_\_ Statics (CE-2121 or equivalent)
- \_\_\_\_\_ Mechanics of Materials (CE-3121 or equivalent)
- \_\_\_\_\_ Fluid Mechanics (CE-3313 or equivalent)
- \_\_\_\_\_ Computer Programming (CE-2200 or equivalent)

#### 1.1 Environmental and Sustainability

- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ General Chemistry (CHEM-1130 or equivalent)
- \_\_\_\_\_ Environmental Engineering (CE-5401 or equivalent)

#### 1.2 Geographic Information Systems

- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Physics II (PHYS-2331 or equivalent)
- \_\_\_\_\_ Plane Surveying (CE-2212 or equivalent)
- \_\_\_\_\_ Dynamics (CE-3111 or equivalent)

#### 1.3 Geotechnical

- \_\_\_\_\_ Physics II (PHYS-2331 or equivalent)
- \_\_\_\_\_ Dynamics (CE-3111 or equivalent)
- \_\_\_\_\_ Geotechnical Engineering (CE-3708 or equivalent)
- \_\_\_\_\_ Intermediate Soils Engineering (CE-4718 or equivalent)
- \_\_\_\_\_ Intermediate Foundation Engineering (CE-4738 or equivalent)
- \_\_\_\_\_ Engineering Geology (CE-5780 or equivalent)

#### 1.4 Hydrologic and Hydraulic Engineering

- \_\_\_\_\_ General Chemistry (CHEM-1130 or equivalent)
- \_\_\_\_\_ Physics II (PHYS-2331 or equivalent)
- \_\_\_\_\_ Dynamics (CE-3111 or equivalent)
- \_\_\_\_\_ Applied Fluid Mechanics (CE-3323 or equivalent)
- \_\_\_\_\_ Design of Water and Wastewater Systems (CE-3414 or equivalent)

### 1.5 Structural

- \_\_\_\_\_ Physics II (PHYS-2331 or equivalent)
- \_\_\_\_\_ Dynamics (CE-3111 or equivalent)
- \_\_\_\_\_ Structural Analysis (CE-3505 or equivalent)
- \_\_\_\_\_ Geotechnical Engineering (CE-3708 or equivalent)
- \_\_\_\_\_ Structural Steel Design (CE-4575 or equivalent)
- \_\_\_\_\_ Reinforced Concrete Design (CE-4585 or equivalent)

### 1.6 Transportation

- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Physics II (PHYS-2331 or equivalent)
- \_\_\_\_\_ Dynamics (CE-3111 or equivalent)
- \_\_\_\_\_ Engineering Economy (CE-4077 or equivalent)
- \_\_\_\_\_ Transportation Engineering (CE-3602 or equivalent)
- \_\_\_\_\_ Highway Engineering (CE-4602 or equivalent)

## **2. Master of Engineering**

→ Check the appropriate discipline-specific list below.

### 2.1 Geographic Information Systems

- \_\_\_\_\_ Calculus I (MATH-1401 or equivalent)
- \_\_\_\_\_ Calculus II (MATH-2411 or equivalent)
- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Basic Science (2 semesters)
- \_\_\_\_\_ Plane Surveying (CE-2212 or equivalent)
- \_\_\_\_\_ Computer Programming (CE-2200 or equivalent)

### 2.2 Sustainable Infrastructure

- \_\_\_\_\_ Calculus I (MATH-1401 or equivalent)
- \_\_\_\_\_ Calculus II (MATH-2411 or equivalent)
- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Physics I (PHYS-2311 or equivalent)
- \_\_\_\_\_ Physics II or Thermodynamics
- \_\_\_\_\_ Chemistry I or Biology I or Ecology I or Physiology I
- \_\_\_\_\_ Statics (CE-2121 or equivalent)
- \_\_\_\_\_ Fluid Mechanics (CE-3313 or equivalent)
- \_\_\_\_\_ Computer Programming (CE-2200 or equivalent)

### 2.3 Transportation Systems

- \_\_\_\_\_ Calculus I (MATH-1401 or equivalent)
- \_\_\_\_\_ Calculus II (MATH-2411 or equivalent)
- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Physics I (PHYS-2311 or equivalent)
- \_\_\_\_\_ Basic Science (in addition to Physics I)
- \_\_\_\_\_ Economics (Macro-, Micro-, or Engineering Economics) or approved related topics (2 semesters)
- \_\_\_\_\_ Computer Programming (CE-2200 or equivalent)

## **3. Ph.D. in Civil Engineering Systems**

→ Check the following courses.

- \_\_\_\_\_ Calculus I (MATH-1401 or equivalent)
- \_\_\_\_\_ Calculus II (MATH-2411 or equivalent)
- \_\_\_\_\_ Probability and Statistics (MATH-3800 or equivalent)
- \_\_\_\_\_ Physics I (PHYS-2311 or equivalent)
- \_\_\_\_\_ Physics II or Thermodynamics
- \_\_\_\_\_ Chemistry I or Biology I or Ecology I or Physiology I
- \_\_\_\_\_ Statics (CE-2121 or equivalent)
- \_\_\_\_\_ Fluid Mechanics (CE-3313 or equivalent)
- \_\_\_\_\_ Computer Programming (CE-2200 or equivalent)