

Prerequisite Requirements for Graduate Degrees in Civil Engineering

Name _____ Degree/Discipline _____

Note: Applicants must show evidence of completed prerequisites as the example below:

___ List course taken (as shown on your transcript) to fulfill requirement ___ Calculus II (MATH-2411 or equivalent)

1. Master of Science or PhD in Civil Engineering* → Mark courses taken here AND specialty area list.

- ___ 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 (CVEN-2121 or equivalent)
- ___ Mechanics of Materials (CVEN-3121 or equivalent)
- ___ Fluid Mechanics (CVEN-3313 or equivalent)
- ___ Computer Programming (ENGR-1100 or equivalent)

1.1 Construction Engineering and Management

- ___ Engineering Surveying (CVEN-2212 or equivalent)
- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Introduction to Structural Materials (CVEN 3141 or equivalent)
- ___ Structural Analysis (CVEN-3505 or equivalent)

1.2 Hydrologic, Environmental and Sustainability

- ___ General Chemistry (CHEM-1130 or equivalent)
- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Environmental Engineering (CVEN-3401 or equivalent)

Note: Statics (CVEN-2121) and Mechanics of Materials (CVEN-3121) are NOT required for this specialty area.

1.3 Geographic Information Systems and Geomatics

- ___ Engineering Surveying (CVEN-2212 or equivalent)
- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Any other course listed on another M.S. specialty area list

1.4 Geotechnical

- ___ Physics II (PHYS-2331 or equivalent)
- ___ Dynamics (CVEN-3111 or equivalent)
- ___ Geotechnical Engineering I (CVEN-3718 or equivalent)
- ___ Intermediate Foundation Engineering (CVEN-4738 or equivalent)
- ___ Engineering Geology (CVEN-5780 or equivalent)

1.6 Structural

- ___ Physics II (PHYS-2331 or equivalent)
- ___ Dynamics (CVEN-3111 or equivalent)
- ___ Structural Analysis (CVEN-3505 or equivalent)
- ___ Geotechnical Engineering I (CVEN-3718 or equivalent)
- ___ Structural Steel Design (CVEN-4575 or equivalent)
- ___ Reinforced Concrete Design (CVEN-4585 or equivalent)

1.7 Transportation

- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Transportation Engineering (CVEN-5621 or equivalent)
- ___ Engineering Economy or Contracts or Cost Estimation (CVEN-4077, 4087, or 5233 or equivalent)
- ___ Highway Engineering (CVEN-5602 or equivalent)
- ___ Any other course listed on another M.S. specialty area list

2. Master of Engineering → Mark courses already taken in relevant specialty area list.

* EASPhD students must satisfy all pre-requisites specified by their advisor, which will range between the CE PhD requirements for a student's specialty area and the MEng requirements of that area if offered. See other side.

Reviewed and signed by Advisor

Student _____

Date _____

All courses listed on previous page DO NOT apply to Masters of Engineering students.

Note: Applicants must show evidence of completed prerequisites as the example below:

___ List course taken (as shown on your transcript) to fulfill requirement ___ Calculus II (MATH-2411 or equivalent)

2.1 Construction Engineering and Management

- ___ Calculus I (MATH-1401 or equivalent)
- ___ Calculus II (MATH-2411 or equivalent) or Autocad (CVEN 1025 or equivalent)
- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Physics I (PHYS-2311 or equivalent)
- ___ Statics (CVEN-2121 or equivalent)
or (ARCH 3340 Theory of Structures I + ARCH 4340 Theory of Structures II or equivalent)
- ___ Engineering Surveying (CVEN-2212 or equivalent)
- ___ Computer Programming (ENGR-1100 or equivalent)

2.2 Geographic Information Systems and Geomatics

- ___ Calculus I (MATH 1401 or equivalent)
- ___ Probability & Statistics (MATH 3800 or equivalent; CVEN 5611 will satisfy requirement)
- ___ Plane Surveying (CVEN 2212 or equivalent; CVEN 5391 will satisfy requirement)
- ___ Two basic science courses (e.g., Physics, Chemistry, Biology, Ecology, Physiology)
- ___ Computer Programming (ENGR-1100 or equivalent or other programming courses)

2.3 Hydrologic, Environmental and Sustainability

- ___ Calculus I (MATH-1401 or equivalent)
- ___ Calculus II (MATH-2411 or equivalent)
- ___ Engineering Statistics (CVEN-3611 or equivalent) or Probability and Statistics (MATH-3800)
- ___ Physics I (PHYS-2311 or equivalent)
- ___ Chemistry or Biology or Ecology
- ___ Computer Programming (ENGR-1100 or equivalent)

2.4 Transportation Systems

- ___ Calculus I (MATH 1401 or equivalent)
- ___ Probability & Statistics (MATH 3800 or equivalent; CVEN 5611 will satisfy requirement)
- ___ Engineering Economy (CVEN 4077 or equivalent or other economics courses)
- ___ Two basic science courses (e.g., Physics, Chemistry, Biology, Ecology, Physiology)
- ___ Computer Programming (ENGR-1100 or equivalent or other programming courses)

* EASPhD students must satisfy all pre-requisites specified by their advisor, which will range between the CE PhD requirements for a student’s speciality area and the MEng requirements of that area, if offered. It depends on a student’s intended curriculum and dissertation emphasis, career goals, and plans to pass the FE and PE exams. Please speak directly with your intended advisor.

NOTES:

1. Suggested course numbers are provided, but prerequisites may be fulfilled with equivalent courses taken at the undergraduate *or graduate* levels, either at CU Denver or at an equivalent institution.
2. Applicants with more than 5 deficiencies will not be admitted except for rare instances.
3. After admission, a student may file a petition to the department 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.

Reviewed and signed by Advisor

Student _____

Date _____