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-2421or equivalent)
_____ Linear Algebra and Differential Equations (MATH-3195 or equivalent)
_____ Physics I (PHYS-2311or 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

---

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

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)

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

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-requsites specified by their advisor, which will range between the CE PhD requirements for a student's specality 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.