Date _____

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. Applicants with more than 5 deficiencies will not be admitted except for rare instances.
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 relevant discipline-specific 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 (CVEN-2200 or equivalent)

1.1 Environmental and Sustainability
_____ Probability and Statistics (MATH-3800 or equivalent)
_____ General Chemistry (CHEM-1130 or equivalent)
_____ Environmental Engineering (CVEN-5401 or equivalent)

1.2 Geomatics and Geographic Information Systems (GIS)
_____ Probability and Statistics (MATH-3800 or equivalent)
_____ Physics II (PHYS-2331 or equivalent)
_____ Plane Surveying (CVEN-2212 or equivalent)
_____ Any other course listed on another Master of Science discipline-specific list

1.3 Geotechnical
_____ Physics II (PHYS-2331 or equivalent)
_____ Dynamics (CVEN-3111 or equivalent)
_____ Geotechnical Engineering (CVEN-3708 or equivalent)
_____ Intermediate Soils Engineering (CVEN-4718 or equivalent)
_____ Intermediate Foundation Engineering (CVEN-4738 or equivalent)
_____ Engineering Geology (CVEN-5780 or equivalent)

1.4 Hydrologic and Hydraulic Engineering
_____ General Chemistry (CHEM-1130 or equivalent)
_____ Physics II (PHYS-2331 or equivalent)
_____ Dynamics (CVEN-3111 or equivalent)
_____ Applied Fluid Mechanics (CVEN-3323 or equivalent)
_____ Design of Water and Wastewater Systems (CVEN-3414 or equivalent)

1.5 Structural
_____ Physics II (PHYS-2331 or equivalent)
_____ Dynamics (CVEN-3111 or equivalent)
_____ Structural Analysis (CVEN-3505 or equivalent)
_____ Geotechnical Engineering (CVEN-3708 or equivalent)
_____ Structural Steel Design (CVEN-4575 or equivalent)
_____ Reinforced Concrete Design (CVEN-4585 or equivalent)

1.5 Transportation
_____ Probability and Statistics (MATH-3800 or equivalent)
_____ Physics II (PHYS-2331 or equivalent)
_____ Engineering Economy (CVEN-4077 or equivalent)
_____ Transportation Engineering (CVEN-5621 or equivalent)
_____ Highway Engineering (CVEN-5602 or equivalent)
_____ Any other course listed on another Master of Science discipline-specific list

Reviewed and signed by Advisor _____

Student _____ ***Date*** _____

2. Master of Engineering → *Check the appropriate discipline-specific list below.*

2.1 Construction and Engineering Management

_____ 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)
_____ Statics (CVEN-2121 or equivalent)
_____ Plane Surveying (CVEN-2212 or equivalent)
_____ Computer Programming (CVEN-2200 or equivalent)

2.2 Geomatics and Geographic Information Systems (GIS)

_____ 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 (CVEN-2212 or equivalent)
_____ Computer Programming (CVEN-2200 or equivalent)

2.3 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 (PHYS-2331 or equivalent) or Thermodynamics (ENGR-3012 or equivalent)
_____ Chemistry or Biology or Ecology
_____ Computer Programming (CVEN-2200 or equivalent)
_____ Environmental Engineering (CVEN-5401 or equivalent)

2.4 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
_____ Computer Programming (CVEN-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 (CVEN-2121 or equivalent)
_____ Fluid Mechanics (CVEN-3313 or equivalent)
_____ Computer Programming (CVEN-2200 or equivalent)

Reviewed and signed by Advisor _____

Student _____ ***Date*** _____