

**PROFESSIONAL MASTERS OF SCIENCE DEGREE
STRUCTURAL ENGINEERING AND MECHANICS**

30 credits required as follows:

- CEE 2333 – *Intro to Finite Element Analysis* (3 credits)
- CEE 2320 – *Advanced Mechanics of Materials* (3 credits)
- 3 credits from 234X courses (design courses)
- 3 **additional** credits from 23XX or 33XX courses (SEM courses)¹
- 3 **additional** credits from 33XX courses (SEM courses)
- 9 credits CEE 2XXX or 3XXX courses² (i.e. three elective courses) in related areas, with approval of the Advisor
- 6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

¹ CEE 2330 *Advanced Structural Analysis* **may not** be taken for graduate credit if the student's undergraduate program includes CEE 1331 or equivalent.

² Up to 3 credits of CEE 2996 – *Special Investigation* may be used to satisfy the CEE 2XXX requirement although these may **not** be used to satisfy 23XX or 33XX requirements.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTER OF SCIENCE DEGREE
ENVIRONMENTAL ENGINEERING**

30 credits required as follows:

- CEE 2500: Environmental Engineering Microbiology (3 Credits)
- CEE 2501: Environmental Engineering Chemistry (3 Credits)
- CEE 2502: Physical-Chemical Principles in Environmental Engineering (3 Credits)
- CEE 3501: Environmental Engineering Processes I (3 Credits)
- CEE 3502: Environmental Engineering Processes II (3 Credits)
- 9 credits CEE 2XXX or 3XXX courses (i.e. three elective courses) in related areas, with approval of the Advisor
- 6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTER OF SCIENCE DEGREE
WATER RESOURCES ENGINEERING**

30 credits required as follows:

- CEE 2400: Hydraulic Engineering (3 Credits)
- CEE 2401: Open Channel Hydraulics (3 Credits)
- CEE 2404: Surface Hydrology (3 Credits)

CEE 2405: Ground Water Hydrology (3 Credits)

CEE 2414: Advanced Hydrology (3 Credits)

9 credits CEE 2XXX or 3XXX courses (i.e. three elective courses) in related areas, with approval of the Advisor

6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTER OF SCIENCE DEGREE
ENVIRONMENTAL AND WATER RESOURCES ENGINEERING**

30 credits required as follows:

CEE 2400: Hydraulic Engineering (3 Credits)

CEE 2401: Open Channel Hydraulics (3 Credits)

CEE 2404: Surface Hydrology (3 Credits)

CEE 2500: Environmental Engineering Microbiology (3 Credits)

CEE 2501: Environmental Engineering Chemistry (3 Credits)

CEE 2502: Physical-Chemical Principles in Environmental Engineering (3 Credits)

6 credits CEE 2XXX or 3XXX courses (i.e. two elective courses) in related areas, with approval of the Advisor

6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTERS OF SCIENCE DEGREE
GEOTECHNICAL ENGINEERING**

30 credits required as follows:

CEE 2800 - Engineering Geology (3 credits)

CEE 2801 - Advanced Soil Mechanics (3 credits)

CEE 2802 – Geotechnical Analysis (3 credits)

CEE 2814 - Slope Stability (3 credits)

3 *additional* credits from CEE 38XX level course in Geotechnical Engineering

9 credits CEE 2XXX or 3XXX courses³ (i.e. three elective courses) in related areas, with approval of the Advisor

6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

³ The students can also take an independent study course CEE 2996; however they have to write a report from the results of the independent study to give the grade. The rest of the courses could

be any from the Civil Engineering Program or from other departments with the approval of the Adviser.

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**PROFESSIONAL MASTERS OF SCIENCE DEGREE
PAVEMENT ENGINEERING**

CEE2714 – Pavement Design (3 credits)

CEE2715 – Pavement Rehabilitation (3 credits)

CEE2717- Properties of Concrete or CEE 2718 – Advanced Bituminous Materials (3 credits)

CEE 3714 – Advanced Pavement Design (3 credits)

6 **additional** credits either from CEE 23XX (structure courses) or from CEE 28XX (Geotechnical Courses) with approval of the Advisor

6 credits CEE 2XXX or 3XXX courses³ (i.e. two elective courses) in related areas, with approval of the Advisor

6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTERS OF SCIENCE DEGREE
TRANSPORTATION ENGINEERING**

CEE 2700 – Transportation Management and Operations (3 credits)

CEE 2720 – Urban Transportation Planning (3 credits)

CEE 2714 – Pavement Design (3 credits)

CEE 2730 – Highway Engineering (3 credits)

CEE 2710 – Traffic Control Systems (3 credits)

CEE 2750 – Transportation Project Development

6 **additional CEE** credits (2 courses) from the following list or related area, with approval of the Advisor:

CEE 2105 Advanced Civil Engineering Materials (3 credits)

CEE 3714 - Pavement Design and Analysis II (3 credits)

CEE 2715 - Pavement Rehabilitation (3 credits)

CEE 2717 - Components, Properties and Design of Portland cement Concrete (3 credits)

CEE 2718 - Advanced Construction Bituminous (3 credits)

6 credits CEE 2XXX or 3XXX courses³ (i.e. two elective courses) in related areas, with approval of the Advisor

Students must have a final grade point average of 3.00 or higher to be awarded their degree.

**PROFESSIONAL MASTERS OF SCIENCE DEGREE
CONSTRUCTION MANAGEMENT**

30 credits required as follows:

CEE 2201 - Construction Cost Estimating (3 credits)

CEE 2202 – Construction Scheduling (3 credits)

CEE 2203 – Construction Methods & Equipment (3 credits)

CEE 2204 - Construction Law & Risk Management (3 credits)

CEE 2205 – Construction Finance & Cost Control (3 Credits)

9 credits CEE 2XXX or 3XXX courses (i.e. three elective courses) in related areas, with approval of the Advisor

6 Graduate credits (i.e. two graduate technical electives) in engineering, science discipline appropriate for the program, public health, business or mathematics, with the approval of the Advisor and provided all necessary course prerequisites are fulfilled.

Students must have a final grade point average of 3.00 or higher to be awarded their degree.