PLAN OF STUDY
Department of Civil and Environmental Engineering
Master of Science in Civil Engineering
Specialization in Construction Materials

Student’s Name (Please type or print)  
Student’s UIN  Anticipated Degree Date  
E-mail address  
Mailing address  

Academic Advisor (Please type or print)  
The Construction Materials faculty has established these requirements for the MS degree to assure that the students have adequate preparation through coursework for an MS in construction materials. The required courses provide a broad knowledge in construction materials as well as a minimum knowledge in civil engineering, both of which the faculty deem necessary for MS degree.

Coursework
The student must complete 400- or 500-level courses in the following categories:

1. Core Courses – Students must complete two core courses: CEE401 (concrete), and CEE405 (asphalt). Each course should be taken for 4 hours credit. Courses already taken and passed may be used to satisfy this requirement. A satisfying course would be a semester-long class on the particular material, containing essential topics including chemistry, microstructure and physical properties. The student is also expected to already have had lab experience on the material.

2. Advanced Materials Courses – Students must complete two advanced materials courses, selected from the following: CEE501, CEE502, CEE503, CEE 504, CEE598IR, and CEE598FF. Courses taken for the Bachelor degree may be used to satisfy this requirement.

3. Electives – Students must complete additional elective courses, 4 to 16 hours as needed to satisfy the requirement for thesis or non-thesis option (below), selected from the attached list.

For the thesis option, students must complete at least 24 hours of coursework and 8 hours of thesis research. For the non-thesis option, students must complete at least 36 hours of coursework. For both options, at least 12 hours of the coursework must be at the 500 level.

Exceptions to these requirements must be approved by the Construction Materials faculty.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course</th>
<th>Credit (H)</th>
<th>Semester</th>
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</thead>
<tbody>
<tr>
<td>Core Courses</td>
<td>CEE401</td>
<td>4</td>
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<td></td>
<td>CEE405</td>
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Thesis Option (Check One):  □ Thesis  □ Non-Thesis

Notes on filling out the Plan of Study
List any transfer courses by course number at offering institution (these courses must be approved, by petition, by the Graduate College). Include a brief description of these courses on an attached separate sheet. Fill out the Plan of Study in ink.

Submit the completed form to Joan Christian in 1108 Newmark by the end of your first semester as a M.S. student in Construction Materials with a copy to your academic advisor.

Required Signatures

Student  Date

Academic Advisor  Date

Chair of Construction Materials Faculty  Date
M.S.

Materials Courses

Core
CEE 401  Concrete Materials  
CEE 405  Asphalt Materials I

Advanced
CEE 501  Materials Characterization  
CEE 502  Advanced Concrete Chemistry  
CEE 503  Deterioration of Construction Materials  
CEE 504  Infrastructure NDT  
CEE 598R  Repair of Civil Infrastructure  
CEE 598FF  Fracture of Plain and Fiber Concrete  
CEE 598THM  Theory of Heterogeneous Materials  
CEE598CB  Concrete at Multi-scale

Elective
Metals
MSE 441  Metals Processing  
MSE 442  Metals Laboratory  
MSE 443  Design of Engineering Alloys

Polymers
MSE 450  Intro to Polymer Sci and Eng  
MSE 452  Polymer Laboratory  
MSE 453  Plastics Engineering  
TAM 427  Mechanics of Polymers

Soils
CEE 483  Soil Mechanics and Behavior  
NRES 487  Soil Chemistry

Mechanics
CEE 470  Structural Analysis  
CEE 471  Structural Mechanics  
CEE 575  Fracture and Fatigue  
CEE 570  Finite Element Methods  
ME 430  Failure of Engrg Materials  
ME 532  Fracture Resistant Design  
MSE 440  Adv Mechanical Prop of Solids  
MSE 540  Advanced Mechanical Behavior  
TAM 424  Mechanics of Structural Metals  
TAM 428  Mechanics of Composites

Durability
TAM 451  Intermediate Solid Mechanics  
TAM 456  Experimental Stress Analysis  
TAM 524  Micromechanics of Materials  
TAM 525  Advanced Composite Materials  
TAM 551  Solid Mechanics, I  
TAM 552  Solid Mechanics, II  
TAM 555  Fracture Mechanics

Testing
CEE 498KUC  Exprmntl Meth in Stru & Mat

Design
CEE 406  Pavement Design, I  
CEE 462  Steel Structures, II  
CEE 463  Reinforced Concrete, II  
CEE 467  Masonry Structures  
CEE 468  Prestressed Concrete  
CEE 469  Wood Structures  
CEE 506  Pavement Design, II  
CEE 560  Steel Structures, III  
CEE 561  Reinforced Concrete, III  
CEE 563  Reinforced Concrete, IV

Others
GEOL 432  Mineralogy and Mineral Optics  
GEOL 436  Petrology and Petrography  
GEOL 440  Sedimentology and Stratigraphy  
MSE 401  Thermodynamics of Materials  
MSE 402  Kinetic Processes in Materials  
MSE 405  Microstructure Characterization  
MSE 406  Thermal-Mech Behavior of Mats  
MSE 420  Ceramic Mats and Properties  
MSE 480  Surfaces and Colloids  
MSE 481  Electron Microscopy & Diffract  
MSE 486  Selection of Eng Mats  
MSE 489  Matl Select for Sustainability

Notes and Comments
(Include descriptions of transfer courses and justification of deviations from the pre-approved course list).

Review Comments
(This section is reserved for comments by the faculty advisor or by the Construction Materials faculty).