## **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)	Requirement	Course	Credit (H)	Semester
Student's UIN Anticipated Degree Date	Cores	CEE401 CEE405	4 4	
E-mail address	Advanced			
	Elective			
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.	TOTAL CRED	IT		
Coursework	Thesis Option (C	Thesis Option (Check One): □Thesis		
The student must complete 400- or 500- level courses in the following categories .			□Non	-Thesis
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 semesterlong 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.	List any transfer institution (these the Graduate Co courses on an att Study in ink.	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.		
Advanced Materials Courses – Students must complete two advanced materials courses, selected from the	in Construction			
following: CEE501, CEE502, CEE503, CEE 504, CEE598IR, and CEE598FF. Courses taken for the Bachelor degree may be used to satisfy this requirement.	Required S	ignatures		
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),	Student Academic Advi	sor		Date Date
selected from the attached list.	readonic ruvi			Dan
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.	Chair of Constr	ruction Material	s Faculty	Dat

Exceptions to these requirements must be approved by the

Construction Materials faculty.

### M.S.

## **Materials Courses**

Core	TAM 451 Intermediate Solid Mechanics		
CEE 401 Concrete Materials	TAM 456 Experimental Stress Analysis		
CEE 405 Asphalt Materials I	TAM 524 Micromechanics of Materials		
Advanced	TAM 525 Advanced Composite Materials		
CEE 501 Materials Characterization	TAM 551 Solid Mechanics, I		
CEE 501 Matchais Characterization CEE 502 Advanced Concrete Chemistry	TAM 552 Solid Mechanics, II		
CEE 503 Deterioration of Construction Materials	TAM 555 Fracture Mechanics		
CEE 504 Infrastructure NDT	Durability		
CEE 598IR Repair of Civil Infrastructure	MSE 445 Corrosion of Metals		
CEE 598FF Fracture of Plain and Fiber Concrete	Testing		
CEE 598THM Theory of Heterogeneous Materials	CEE 498KUC Expresentl Meth in Stru & Mat		
CEE598CB Concrete at Multi-scale	Design		
Elective	CEE 406 Pavement Design, I		
	CEE 462 Steel Structures, II		
Metals	CEE463 Reinforced Concrete, II		
MSE 441 Metals Processing	CEE 467 Masonry Structures		
MSE 442 Metals Laboratory	CEE 468 Prestressed Concrete		
MSE 443 Design of Engineering Alloys	CEE 469 Wood Structures		
Polymers	CEE 506 Pavement Design, II		
MSE 450 Intro to Polymer Sci and Eng	CEE 560 Steel Structures, III		
MSE 452 Polymer Laboratory	CEE 561 Reinforced Concrete, III		
MSE 453 Plastics Engineering	CEE 563 Reinforced Concrete, IV		
TAM 427 Mechanics of Polymers Soils	Others		
CEE 483 Soil Mechanics and Behavior	GEOL 432 Mineralogy and Mineral Optics		
NRES 487 Soil Chemistry	GEOL 436 Petrology and Petrography		
Mechanics	GEOL 440 Sedimentology and Stratigraphy		
CEE 470 Structural Analysis	MSE 401 Thermodynamics of Materials		
CEE 470 Structural Analysis CEE 471 Structural Mechanics	MSE 402 Kinetic Processes in Materials		
CEE 575 Fracture and Fatigue	MSE 405 Microstructure Characterization		
CEE 570 Finite Element Methods	MSE 406 Thermal-Mech Behavior of Matls		
ME 430 Failure of Engrg Materials	MSE 420 Ceramic Matls and Properties		
ME 532 Fracture Resistant Design	MSE 481 Electron Microscopy & Diffract		
MSE 440 Adv Mechanical Prop of Solids	MSE 481 Electron Microscopy & Diffract		
MSE 540 Advanced Mechanical Behavior	MSE 486 Selection of Eng Matls		
TAM 424 Mechanics of Structural Metals	MSE 489 Matl Select for Sustainability		
TAM 428 Mechanics of Composites			

#### **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).