

**Sample Course Plan for Coursework MSCE:
Pavements and Transportation Materials****Assumed student background**

The sample course plan shown below was designed assuming that a student has taken (as a minimum) CEE 3101 (Civil Engineering Materials), CEE 3401 (Transportation Engineering), and CEE 3810 (Soil Mechanics for Engineers), or equivalents.

Requirements: 30 credits *minimum* (12 maximum credits at 3000-4000 level; 18 credits at 5000 level)

Sample Coursework List

	Credits	Semester
1-2) Take two of the following courses;		
- CEE 4101/5101 – Bituminous Materials	3	Fall/Spr
- CEE 4401/5411 – Pavement Design	3	Fall
- CEE 4407/5417 – Transportation Design	4	Spring
3) CEE 4830 – Geosynthetics Engineering	3	Spring
4) CEE 5109 – Sustainable Pavements	3	Fall
5) CEE 5202 – Finite Element Analysis	3	Spring
6) CEE 5350 – Infrastructure Life Cycle Engineering	3	Spring
7) CEE 5401 – Advanced Pavement Design	3	Spring
8) CEE 5810 – Advanced Soil Mechanics	3	Fall
9) CEE 5811 – Fundamentals of Soil Behavior & Eng. Lab.	3	Spring
10) Systems Elective	3	

Systems Elective (Must take at least one of these courses.)

CEE 5710 – Modeling and Simulation Applications	3	Fall
CEE 5730 – Probabilistic Analysis and Reliability	3	Fall
CEE 5740 – Introduction to System Identification	3	Spring
CEE 5760 – Optimization Methods	3	Spring

Sample Graduate Electives

CEE 4820 – Foundation Engineering	3	Fall
CEE 5102 – Advanced Concrete Materials	3	Fall
CEE 5190 – Special topics in Civil Engineering Materials	1-3	Fall/Spr/Sum
CEE 5404 – Transportation Planning	3	Fall
CEE 5409 – Railroad Facilities and Design	3	Fall
CEE 5490 – Special Topics in Transportation Engineering	1-3	Fall/Spr/Sum
CEE 5811 – Fundamentals of Soil Behavior & Engr. Lab	3	Fall
ENG 5510 – Sustainable Future I	3	Fall
ENG 5520 - Sustainable Futures II	3	Spring
MA 3740 - Statistical Programming and Analysis	3	Fall
MA 4710 – Regression Analysis	3	Spring
MA 4720 - Design and Analysis of Experiments	3	Fall

MEEM 5110 - Continuum Mechanics/Elasticity	3	Fall
MEEM 5180 - Mechanics of Composite Materials	3	Spring
MEEM 6130 - Engineering Fracture Mechanics	3	Spring/Sum
MSE 5530 – Theory of Scanning Electron Microscopy	3	Fall/Spring
MSE 5580 - Introduction to Scanning Probe Microscopy	2	Fall

Disclaimer: This course plan is meant to serve as a sample for a student interested in pursuing a coursework-only MSCE degree with a focus on transportation materials and pavement engineering. This plan may not be appropriate for all students, nor is it necessary for a student to follow this schedule to earn a coursework-only degree. Student-specific goals and prior education must be considered and consultation with faculty members is required. Consult with instructors before enrolling in courses that are outside of the Department to ensure that the course will be consistent with your goals and background since sometimes other courses may provide more value to the student. **All MSCE degree requirements and rules set forth by the Department and the Graduate School must be met in order for a student to finish the program.**