

M.C.S.S. Soil Science Option Course of Study:

Credit

Soil Science Core-Knowledge Areas (a total of three courses from at least two of the following areas) 8-12 hr

Soil Physics / Hydrology

- CRSS 4600/6600-4600L/6600L Soil Physics (4 hr)
- CRSS 8600 Advanced Soil Physics: Numerical Method (3 hr)
- CRSS 8610 Advanced Soil Physics: Analytical Method (3 hr)
- FORS 4110/6110 Forest Hydrology (3 hr)
- FORS 4120/6120 Quantitative Methods in Hydrology (3 hr)
- FORS 8120 Hillslope Hydrology Seminar (2 hr)
- FORS (GEOL) 8740 Hydrologic Flow and Transport Modeling (3 hr)
- GEOL 4220/6220 Hydrogeology (3 hr)

Soil Chemistry / Fertility

- CRSS 4590/6590-4590L/6590L Soil Fertility (4 hr)
- CRSS 4660/6660-4660L/6660L Chemical Analysis of Environmental Samples (3 hr)
- CRSS 4670/6670-4670L/6670L Environmental Soil Chemistry (3 hr)
- CRSS 8000 Soil Physical Chemistry (3 hr)
- CRSS 8520 Advanced Soil Fertility (3 hr)
- CRSS 8650 Nutrient Cycling Models (3 hr)
- CRSS (GEOL) 8760 Organic Contaminant Hydrogeology (3 hr)
- HORT 4110/6110 Plant Nutrition (3 hr)

Soil Biology / Ecology

- CRSS 4400/6400 Crop Ecology (3 hr)
- CRSS (MIBO) 4610/6610-4610L/6610L Soil Microbiology (3 hr)
- CRSS (ECOL) 4650/6650-4650L/6650L Soil Biology and Ecology (4 hr)
- ECOL 6080 Principles of Conservation Ecology and Sustainable Development I. (4 hr)

Pedology / Geology

- CRSS 4520/6520 Field Soil and Site Assessment (3 hr)
- CRSS 4540/6540-4540L/6540L Pedology (3 hr)
- CRSS 8540/8540L Soil Mineralogy (3 hr)
- GEOG 4020/6020 Fluvial Geomorphology (3 hr)
- GEOL 4550/6550 Clay Mineralogy and Geochemistry (3 hr)
- GEOL 4560/6560 Weathering and Diagenesis (3 hr)

Statistics (one course from the following) 3 hr

- STAT 4280/6280 Applied Time Series Analysis (3 hr)
- STAT 6310 Statistical Analysis I (3 hr)
- STAT 6320 Statistical Analysis II (3 hr)
- STAT 8200 Design of Experiments for Research Workers (3 hr)
- STAT 8250 Multivariate Methods (3 hr)
- GEOG 4300/6300 Introductory Spatial Analysis (3 hr)

Soil Science Technology (one course from the following)	2-4 hr
CRSS 8XXX Precision Farming (new course) (3 hr)	
ENGR 5930/7930GPS with Engineering and GIS Applications (2 hr)	
FORS 6150 Control and Systems Theory for the Environmental Scientist (3 hr)	
GEOG 4330/6330-4330L/6330L Use and Interpretation of Aerial Photographs (3 hr)	
GEOG 4370/6370-4370L/6370L Introduction to Geogr. Information Systems (3 hr)	
GEOG 4470/6470-4470L/6470L Geogr. Analysis and Geogr. Information Syst. (3 hr)	
GEOG 4350/6350-4350L/6350L Remote Sensing of Environment (3 hr)	
CSCI 5080/7080-5080L/7080L Personal Computer System Administration (4 hr)	
Soil Science Communication Skills (one course from the following)	1-3 hr
CRSS 8010 Research Methods (3 hr)	
CRSS 8100 Advanced Crop and Soil Sciences Seminar (1 hr)	
Soil Science Internship or special problem (one course from the following)	3 hr
CRSS 8210 Special Problems in Crop and Soil Science (3 hr)	
CRSS 8XXX Graduate Internship (new course) (3 hr)	
Soil Science Elective courses	8-16 hr
	Total hours: 33 hr

M.C.S.S. Crop Science Option Course of Study:

Credit

Crop Science Core-Knowledge Areas (one course from each area) 6-8 hr

Crop Production & Physiology

- CRSS 4230/6260 Forage Management and Utilization (3 hr)
- CRSS 4300/6300 Crop Production and Management (3 hr)
- CRSS 4400/6400 Crop Ecology (3 hr)
- CRSS 4590/6590-4590L/6590L Soil Fertility (4 hr)
- CRSS 4930/6930 Agriculture and Ecology in Tropical America (3 hr)
- CRSS 4940/6940 Agriculture and Ecology in Tropical America Field Trip (3 hr)
- CRSS 6210 Seed Physiology (3 hr)

Crop Protection

- (CRSS)ENTO 4250/6250-4250L/6250L Pesticide Management and Utilization (3 hr)
- ENTO 4740/6740-4740L/6740L Insect Pest Management (3 hr)
- ENTO 8310 Insect/Plant Interactions (2 hr)
- ENTO 8820 Biological Control (3 hr)
- PATH 4280/6280-4280L/6280L Diagnosis and Management of Plant Diseases (3 hr)
- PATH 8000 Field Plant Pathology (1 hr)
- PATH 8410 Advanced Plant Disease Management (3 hr)

Weed Science

- CRSS 4340/6340-4340L/6340L Weed Science (4 hr)
- CRSS 8330/8330L Physiology of Herbicide Action (2 hr)
- CRSS 8340/8340L Environmental Aspects of Herbicide Use (2 hr)
- CRSS 8350 Weed Ecology (2 hr)

Crop Science Statistics (one course from the following) 3 hr

- STAT 6310 Statistical Analysis I (3 hr)
- STAT 6320 Statistical Analysis II (3 hr)
- STAT 8200 Design of Experiments for Research Workers (3 hr)

Crop Science Technology (one course from the following) 3-4 hr

- CRSS 4040/6040 Plant Breeding (3 hr)
- CRSS 8520 Advanced Soil Fertility (3 hr)
- CRSS (GEOL) 8XXX Precision Farming (new course) (3 hr)
- CSCI 5080/7080-5080L/7080L Personal Computer System Administration (4 hr)
- CRSS 4660/6660-4660L/6660L Chemical Analysis of Environmental Samples (3 hr)
- GEOG 4370/6370-4370L/6370L Introduction to Geographic Information Systems (3 r)
- HORT 4110/6110 Plant Nutrition (3 hr)
- PATH 8310/8310L Epidemiology of Plant Diseases (3 hr)

Crop Science Communication Skills 1 hr

- CRSS 8100 Advanced Crop and Soil Science Seminar (1 hr)

Crop Science Internship or special problem (one course from following) 3-4 hr

- CRSS 8210 Special Problems in Crop and Soil Science (3 hr)
- CRSS 8XXX Graduate Internship (new course) (4 hr)

Crop Science Elective courses 10-17 hr

Total hours: 33 hr

Students will take will take a comprehensive final written and oral exam in the last semester of their program. The exams will test for mastery in the selected core-knowledge areas, technology, statistics, and the subject area chosen for the internship or special problems course.