

Soil Science (PhD)

Degree Requirements

Code	Title	Hours	Counts towards
Required Courses			3
SSC 801	Seminar ¹		
SSC 893	Doctoral Supervised Research ²		
	or SSC 895 Doctoral Dissertation Research		
Core Courses			34
SSC 511	Soil Physics		
SSC 521	Soil Chemistry		
SSC 532	Soil Microbiology		
SSC 541	Soil Fertility		
SSC 551	Soil Morphology, Genesis and Classification		
Elective Courses			tbd
"Elective Course" will be determined in conjunction with the academic committee			
Total Hours			72

¹ Students must take at least one credit of SSC 801 Seminar.

² Students are required to take a minimum of two credits of SSC 893 Doctoral Supervised Research or SSC 895 Doctoral Dissertation Research.

Additional Requirements

All Doctoral students must demonstrate competence in the five soil science sub-disciplines listed below.

- Soil Chemistry
- Soil Fertility and Plant Nutrition
- Soil Genesis and Classification
- Soil Microbiology and Biochemistry
- Soil Physics

The required competencies can be achieved by any combination of the following:

1. relevant course work from previous undergraduate and/or graduate degree programs;
 2. prior professional experience in the major sub-discipline(s); and
 3. graduate courses included in the student's Plan of Work (POW) for their current degree program.
- Completion of at least 72 semester credit hours beyond the bachelor's degree
 - If the student has an MS degree from another institution, a maximum of 18 hours of relevant graduate credit from that degree may be applied toward this minimum, upon the recommendation of the student's Graduate Advisory Committee, and the minimum required will be 54 semester credit hours

- If a student completes an MS degree at NC State and continues for a doctoral degree without a break in time, up to 36 relevant credit hours taken while in master's status may be used to meet minimum requirements for the doctoral degree. If there is a break in time between completing the master's (at NC State) and beginning the doctorate (at NC State), the allowance is limited to 18 hours. Either allowance may include those 400-level courses taken as an approved part of the MS degree.
- Completion of preliminary written and oral examinations must be completed within six calendar years from the date of admission
- Successful completion of an original research program
- Success completion of the final oral examination
- Completion of a non-credit exit seminar

Faculty

Professors

Aziz Amoozegar

Area of Research: Environmental Soil Physics

Stephen W. Broome

Area of Research: Environmental Soil Science

David A. Crouse

Area of Research: Soil Science Education

Owen W. Duckworth

Area of Research: Soil Biogeochemistry

Alan J. Franzluebbbers

Area of Research: Soil Ecology and Management

John L. Havlin

Area of Research: Soil Fertility

Joshua L. Heitman

Area of Research: Soil Physics & Hydrology

Richard A. McLaughlin

Area of Research: Urban Soil & Water Management

Michael D. Mullen

Area of Research: Soil Biology & Soil Science Education

Deanna L. Osmond

Area of Research: Soil Fertility & Watershed Management

Wei Shi

Area of Research: Soil Microbiology & Ecology

Michael J. Vepraskas

Area of Research: Wetland Soils & Pedology

Associate Professors

Luciano C. Gatiboni

Area of Research: Soil Fertility & Nutrient Management

Alexandria K. Graves

Area of Research: Soil Microbiology

Assistant Professors

Kevin Garcia

Area of Research: Plant-Microbe Interactions & Nutrient Transport

Amy M. Johnson

Area of Research: Soil Science

Stephanie B. Kulesza

Area of Research: Nutrient Management and Animal Waste

Hui Li

Area of Research: Environmental Soil Chemistry

Ekrem Ozlu

Area of Research: Soil Management

Matthew C. Ricker

Area of Research: Pedology

Alex L. Woodley

Area of Research: Sustainable Agricultural Systems

Practice/Research/Teaching Professor

Robert E. Austin

Area of Research: Geospatial Information and Analytics in Soils,
Agriculture and Environmental Science