# Soil Science (MR)

## Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Required Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 601</td>
<td>Seminar</td>
<td>5-8</td>
<td></td>
</tr>
<tr>
<td>SSC 620</td>
<td>Special Problems</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Core Courses</strong></td>
<td>4-7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select four of the following courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 511</td>
<td>Soil Physics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 521</td>
<td>Soil Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 532</td>
<td>Soil Microbiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 541</td>
<td>Soil Fertility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSC 551</td>
<td>Soil Morphology, Genesis and Classification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Undergraduate Courses</strong></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400-Level undergraduate courses from outside soil science will be determined in conjunction with the academic committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Elective Courses</strong></td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Elective Courses” will be determined in conjunction with the academic committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

1. Students can take no more than two credits of SSC 601 Seminar total.
2. Students can take four to six credits of SSC 620 Special Problems.
3. Students may have courses waived upon proving competency in the following coursework.
4. Students must take at least 18 hours of letter-graded course work – these must be NC State courses or inter-institutional courses (https://studentservices.ncsu.edu/your-classes/exchange-programs/inter-institutional-program/).

## Additional Requirements

All Masters students must demonstrate competence in four of the five sub-disciplines listed below, and Doctoral students must demonstrate competency in all five.

- 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.

## Faculty

**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. Franzluebbers**
**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**

**Alexandria K. Graves**
**Area of Research:** Soil Microbiology

**Kevin Garcia**
**Area of Research:** Plant-Microbe Interactions & Nutrient Transport

**Terrence G. Gardner**
**Area of Research:** Soil & Environmental Microbial Ecology

**Luciano C. Gatiboni**
**Area of Research:** Soil Fertility & Nutrient Management

**Amy M. Johnson**
**Area of Research:** Soil Science

**Stephanie B. Kulesza**
**Area of Research:** Nutrient Management and Animal Waste
Hui Li
Matthew C. Ricker
Area of Research: Pedology
Alex L. Woodley
Area of Research: Sustainable Agricultural Systems

Practice/Research/Teaching Professors
Robert E. Austin
Area of Research: Geospatial Information and Analytics in Soils, Agriculture and Environmental Science

Stanley W. Buol
Keith Cassel
Maurice Cook
Fred Cox
Carl Crozier
George Cummings
J. Wendell Gilliam
Dean L. Hesterberg
Daniel Israel
Joseph Kleiss
David Lindbo
Gordon Miner
George C. Naderman Jr.
Wayne Robarge
Thomas J. Smyth
Richard Volk
Michael Wagger
Jeffrey G. White
Arthur Wollum