# WATER SCIENCE AND MANAGEMENT - DOCTOR OF PHILOSOPHY

## Core Courses

This degree is designed to give students a thorough and comprehensive knowledge of water science and hydrology and training in methods of research. The Ph.D. degree can be earned in about 30-40 credits of formal course work beyond the Masters Degree, plus additional dissertation research credits, for a minimum total of 75 credits beyond the BS degree, as detailed below.

### Master's Degree Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>AEEC 575</td>
<td>Economics of Water Resource Management and Policy</td>
<td>3</td>
</tr>
<tr>
<td>RGSC 518 or SOIL 456</td>
<td>Watershed Methods and Management or Irrigation and Drainage</td>
<td>3</td>
</tr>
<tr>
<td>C E 557</td>
<td>Water Resources Development</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 578</td>
<td>Fundamentals of Geographic Information Science and Technology (GIS &amp; T)</td>
<td>3-4</td>
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<tr>
<td>or GEOG 521</td>
<td>GIS &amp; T Applications and Modeling</td>
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Select one from the following: 1

- A ST 505 Statistical Inference I
- C E 582 Statistical Hydrology
- GEOG 585 Advanced Spatial Analysis

Select one from the following: 2

- Seminar
- WSAM 605 Arid Land Water Resources
- WSAM 610 Water and Sustainable Economic Development
- GEOG 501 Research Design and History of Geographic Thought

Electives from the designated water list for the relevant field of study | 10
Free electives in consultation with the student’s committee | 5
Dissertation | 18

Total Credits | 83-85

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1. With the consent of the instructor and the approval of the student’s advisor, C E 582 Statistical Hydrology or GEOG 585 Advanced Spatial Analysis may be used as a substitute.

2. Seminar may be substituted by WSAM 605 Arid Land Water Resources, or WSAM 610 Water and Sustainable Economic Development, or GEOG 501 Research Design and History of Geographic Thought.

Students are expected to have a basic foundation in Geographic Information System (GIS) within a classroom, research experience, or professional experience. Students without this background are required to take an appropriate GIS class as advised by their advisor such as: GEOG 578 Fundamentals of Geographic Information Science and Technology (GIS & T), or GEOG 521 GIS & T Applications and Modeling, or FWCE 535 Special Topics.