

# WATER SCIENCE AND MANAGEMENT (WATER QUALITY TREATMENTS) - DOCTOR OF PHILOSOPHY

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 33-35 credits of formal course work beyond the Masters Degree, plus 18 additional dissertation research credits, for a minimum total of 75 credits beyond the BS degree, as detailed below.

| Prefix   | Title   | Credits      |
|--|---|--------------|
| <b>Core Courses</b>  |   |              |
| AEEC 5350  | Economics of Water Resource Management and Policy           | 3            |
| RGSC 518<br>or SOIL 456  | Watershed Methods and Management<br>Irrigation and Drainage | 3            |
| C E 557  | Water Resources Development                                 | 3            |
| Select one from the following:   |   | 3-4          |
| GEOG 578   | Fundamentals of GIS   |              |
| GEOG 588   | GIS for Water Resources                                     |              |
| Select one from the following: <sup>1</sup>  |   | 3-4          |
| A ST 505   | Statistical Inference I                                     |              |
| C E 582  | Statistical Hydrology                                       |              |
| GEOG 585   | Spatial Analysis and Modeling                               |              |
| Seminar Credits OR Select one from the following: <sup>2</sup>   |   | 2            |
| WSAM 605   | Arid Land Water Resources                                   |              |
| WSAM 610   | Water and Sustainable Economic Development                  |              |
| GEOG 501   | Geographic Theory and Application                           |              |
| <b>Concentration Electives</b>   |   |              |
| Students must work with their committee to select 12 credits of elective courses that would meet the Water Quality Treatment concentration |   | 12           |
| <b>Electives chosen in consultation with the student's committee (enough to meet the required minimum of 75 credits)</b>                   |   | <b>28</b>    |
| <b>Dissertation</b>  |   | <b>18</b>    |
| WSAM 700   | Doctoral Dissertation                                       |              |
| <b>Total Credits</b>   |   | <b>75-77</b> |

<sup>1</sup> With the consent of the instructor and the approval of the student's advisor, C E 582 Statistical Hydrology or GEOG 585 Spatial Analysis and Modeling may be used as a substitute.

<sup>2</sup> Seminar may be substituted by WSAM 605 Arid Land Water Resources, or WSAM 610 Water and Sustainable Economic Development, or GEOG 501 Geographic Theory and Application.

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 GIS, or FWCE 535 Special Topics.