

# WATER RESOURCES SCIENCE AND MANAGEMENT OPTION (PH.D.)

## Doctor of Philosophy. Major in Water Resources - Science and Management Option.

### Entry Requirements

Coursework in the following is required for admission to the Water Resources Ph.D in the Science & Management Option. Provisional admission may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits)
- Chemistry or Physics or Biology/Ecology (6 credits total)

### Common Courses

Students are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. These include the following courses:

Code	Title	Hours
WR 501	Seminar	1
WR 506	Interdisciplinary Methods in Water Resources	2
<b>Total Hours</b>		<b>3</b>

### Core Courses

Students are required to take 9 credits of the following courses:

Code	Title	Hours
<b>Aquatic Ecology</b>		
FISH 430	Riparian and River Ecology	3
FISH 535	Limnology	4
<b>Fluvial Geomorphology and Aquatic Habitat</b>		
CE 526	Aquatic Habitat Modeling	3
CE 535	Fluvial Geomorphology and River Mechanics	3
<b>Physical Hydrology</b>		
ENVS 450	Environmental Hydrology	3
<b>Subsurface Hydrology</b>		
HYDR 509	Quantitative Hydrogeology	3
SOIL 515	Soil and Environmental Physics	3
<b>Water Quality</b>		
HYDR 512	Environmental Hydrogeology	3
SOIL 552	Environmental Water Quality	3

### Elective Courses

At least one elective course *must* be in either the Engineering & Science or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. All students are strongly encouraged to take at least one course in tools and technology such as statistics, GIS, remote sensing, numerical

modeling, or programming that most closely aligns with their career goals. A detailed list of elective courses for this option area is provided in the Graduate Handbook on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental scientific theories and concepts within their sub-field of water resources and application to management challenges.
3. Students will independently synthesize key knowledge gaps to conceptualize, develop, and implement a novel disciplinary and/or interdisciplinary water resources research project.
4. Students will develop written and oral communication skills to engage professional peers and the public in a concise, factually accurate, mechanically correct, and engaging manner.