WATER RESOURCES ENGINEERING AND SCIENCE OPTION (PH.D.)

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

Entry Requirements

Coursework in the following is required for admission to the Water Resources Ph.D. in the Engineering & Science Option Area.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)
- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

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
Total Hours		**3**

Core Courses

Students are required to take 9 credits from the following:

Code	Title	Hours
CE 421	Engineering Hydrology	3
CE 511	Design of Water and Wastewater Systems I	3
CE 520	Fluid Dynamics	3
CE 526	Aquatic Habitat Modeling	3
CE 535	Fluvial Geomorphology and River Mechanics	3
GEOL 531	Chemical Hydrogeology	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
SOIL 552	Environmental Water Quality	3

Elective Courses

At least one elective course must be in either the Science & Management or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. 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 engineering practices.
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.