WATER RESOURCES ENGINEERING AND SCIENCE OPTION (M.S.)

Master of Science. Major in Water Resources - Engineering and Science Option

Entry Requirements

Coursework in the following is required for admission to the Water Resources M.S. in the Engineering & Science Option Area. 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 (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

Degree programs 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 6 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

The thesis degree consists of at least 30 graduate credits, including at least 6 credits and a maximum of 10 credits of thesis (WR 500) and a minimum of 24 credits of coursework. The non-thesis option requires at least 30 graduate credits, including a minimum of 3 credits of WR 599 (Non-thesis Master's Research) and 27 credits of course work.

At least one elective course should be in either the Science & Management Option or the Law, Management & Policy Option. 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 develop the breadth and depth of disciplinary understanding and critical thinking to contribute to the design, data collection, and analysis of an original water resources research project.
4. Students will develop written and oral communication skills to engage professional peers in a concise, factually accurate, mechanically correct, and engaging manner.