CIVIL, CONSTRUCTION & ENVIRONMENTAL ENGINEERING

WATER RESOURCES ENGINEERING

WHAT IS WATER RESOURCES ENGINEERING?

Water resources engineering is a specific kind of civil engineering that involves the design of new systems and equipment that help manage water resources for human consumption.

Water resource engineering focuses on water supplies, irrigation, design of urban storm-sewer systems, flood forecasting and waste disposal. It also addresses methods for controlling water to avoid water-related damage and catastrophes. Hydraulics engineering, also a sub-discipline of civil engineering, is concerned with the flow and conveyance of fluids, principally water and sewage. Hydraulic engineering is the application of the principles of fluid mechanics to problems dealing with the collection, storage, control, transport, regulation, measurement, and use of water.

Sample job titles: Hydrogeologist; national stormwater leader; research hydraulic engineer; senior group manager; senior hydrogeologist; senior water resources engineer; VP-senior principal water resources engineer; water resources business segment leader.

JOB PROSPECTS

WATER RESOURCES ENGINEER

- *U.S. News* ranked civil engineer (including water resources engineer) as #4 in Best Engineering Jobs in 2021
- Bureau of Labor Statistics (BLS): 2021 median salary $88,570.
- BLS forecasts increase of 1.7% in new civil engineering jobs (including water resources) 2019-2029.

WHAT YOU MIGHT DO IN A DAY

- Design a process to conserve water that reduces environmental impact
- Design a system that pumps water from flood plains to rivers or irrigation systems
- Evaluate storm drainage and flooding to establish storage solutions for that water
- Design a process to maintain a city's water supply
- Build a laboratory model to study construction and flow problems
- Identify the correct materials, such as pumps, pipes, conduits, and turbines, to be used in the construction of a facility that would control water behavior

WHAT TYPE OF EDUCATION DO YOU NEED?

- Jobs in water resources engineering require a bachelor's degree in civil engineering. Coursework often includes calculus, physics, chemistry, hydrogeology, hydraulic engineering, design of hydraulic systems, and fluid mechanics.
- Advancement in the field may require a master's or doctorate degree.
- Many water resources engineers choose to get licensed as a professional engineer by graduating from an accredited program, earning four years of professional experience and passing both the Fundamentals of Engineering and the Professional Engineering exams.

DEGREES OFFERED

- B.S. Civil Engineering
- M.S. Civil Engineering (water resources emphasis)
- Master of Engineering (MENG with a water resources emphasis)
- Ph.D. Civil Engineering (water resources emphasis)

THE UNIVERSITY OF NEW MEXICO
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