

WATER RESOURCES ENGINEERING MINOR

This program is available at the following location:

- Corvallis

The Water Resources Engineering minor is available to any undergraduate student with the interest and necessary background in mathematics and physics. The minor will introduce students to water resources engineering and science and provide the background needed to specialize in water resources.

Minor Code: A020

Upon successful completion of the program, students will meet the following learning outcomes:

- Apply mass, energy, and momentum balances to fluid systems in applications to natural and build systems
- Apply hydrologic models to describe land-atmosphere interactions and predict rainfall-runoff dynamics, with applications to engineering design and resource management.
- Predict and design hydraulic performance of constructed and natural systems, including applications to pumps and open channels
- Analyze nonpoint pollution sources and design best management practices applicable to urban, forested, and agricultural systems.
- Formulate and apply optimization problems to describe water resources systems and evaluate construction or management alternatives.

Code	Title	Credits
Required Core		
BEE 311	ECOLOGICAL FLUID MECHANICS ¹	4
or CE 311	FLUID MECHANICS	
or CHE 331	TRANSPORT PHENOMENA I	
or FE 330	FOREST ENGINEERING FLUID MECHANICS AND HYDRAULICS	
BEE 312	ECOHYDRAULICS ¹	4
or CE 313	HYDRAULIC ENGINEERING	
or FE 330	FOREST ENGINEERING FLUID MECHANICS AND HYDRAULICS	
BEE 313	ECOHYDROLOGY	4
or CE 412	HYDROLOGY	
or FE 434	FOREST WATERSHED MANAGEMENT	
BEE 458	NONPOINT SOURCE POLLUTION ASSESSMENT AND CONTROL	3
CE 429	OPTIMIZATION IN WATER RESOURCES ENGINEERING	3
Electives		
Select at least 9 credits from the following courses:		
BEE 420	ECOLOGICAL SYSTEMS ANALYSIS	
BEE 433	IRRIGATION SYSTEM DESIGN	
BEE 446	RIVER ENGINEERING	
BEE 468	BIOREMEDIATION ENGINEERING	
CE 413	GIS IN WATER RESOURCES	
CE 415	COASTAL INFRASTRUCTURE	
CE 417	HYDRAULIC ENGINEERING DESIGN	
CHE 417	ANALYTICAL INSTRUMENTATION IN CHEMICAL, BIOLOGICAL, AND ENVIRONMENTAL ENGINEERING	
ENVE 321	ENVIRONMENTAL ENGINEERING FUNDAMENTALS	
or ENVE 322	FUNDAMENTALS OF ENVIRONMENTAL ENGINEERING	
ENVE 421	DRINKING WATER TREATMENT PROCESSES	
ENVE 422	WASTEWATER TREATMENT PROCESSES	

ENVE 431	FATE AND TRANSPORT OF CHEMICALS IN ENVIRONMENTAL SYSTEMS
ENVE 456	SUSTAINABLE WATER RESOURCES DEVELOPMENT
ENVE 457	BIOREACTORS
FE 430	WATERSHED PROCESSES
FE 434	FOREST WATERSHED MANAGEMENT (if not used above)
GEO 387	ENVIRONMENTAL HYDROGEOLOGY
or GEO 487	HYDROGEOLOGY
GEOG 423	SNOW HYDROLOGY
HEST 310	+*TRANSDISCIPLINARY COMMUNITY-ENGAGED DESIGN THINKING
Total Credits	27

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Baccalaureate Core course. Applies to general education requirements for undergraduate students in a catalog year up to 2024-2025

+

Core Education course. Applies to general education requirements for undergraduate students in catalog year 2025-2026 and beyond

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Forest Engineering students who complete FE 330 as part of their major requirements can double-count that course in the minor core. Additional elective credits must be completed to reach the 27 minimum total for the minor

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