

CIVIL ENGINEERING - PROFESSIONAL MASTER OF SCIENCE (MSCVE)

The Department of Civil, Environmental and Architectural Engineering offers a professional master's degree tailored toward working engineers who desire to develop a new skill set. The programs are coursework based and result in a Master of Science degree.

Areas of Emphasis

Water Engineering and Management Emphasis

The goal of the professional master's degree program in civil engineering with an emphasis in water engineering and management (WEM) is to provide working engineers with the skills they need to lead a team, initiative or division in the water profession. It's especially relevant for young professionals working for consulting engineers, utilities, manufacturers, and government or regulatory agencies.

The program combines technical courses of the environmental engineering MS degree with professional courses that address leadership, management, communication, finance, and governance in the water profession.

The program curriculum is developed and taught by world-class faculty and senior professionals from:

- CU Boulder's Department of Civil, Environmental and Architectural Engineering;
- CU Denver's School of Public Affairs;
- water utilities' executive and senior professionals from across the U.S.;
- consulting firms and global professional organizations;
- American Water Works Association; and
- Water Environment Federation.

For more information, visit the department's Water Engineering & Management (<http://www.colorado.edu/ceae/research/interdisciplinary-programs/water-engineering-management>) webpage.

Engineering for Developing Communities Emphasis

With a professional master's degree in civil engineering with an emphasis in engineering for developing communities, students will connect classroom learning and hands-on collaboration with organizations internationally to work towards providing solutions to complex global and local problems. The Mortenson Center in Engineering for Developing Communities (MCEDC) trains engineers to work in partnership with people from developing communities worldwide to create sustainable solutions to meet basic needs.

This program merges the skill sets and knowledge of engineering with international development. We offer our students the opportunity to specialize in an option area of their choice, including: construction, energy, environmental engineering, engineering management, global health, policy, or a self-designed topic.

Our graduates are able to provide technical expertise to development agencies or other firms by recognizing the many facets of community development that are critical to sustainable solutions. Students gain

skills in data analysis, project management and systems thinking so they can help create and implement solutions to address the needs of developing communities worldwide.

For more information, visit the Graduate School's Engineering for Developing Communities (<http://www.colorado.edu/graduateschool/masters-programs/engineering-developing-communities>) webpage.

Distance Education Option

Students can take individual courses toward a master's degree or graduate certificate through distance education (online). For more information, connect with the individual graduate program directly.

Requirements

Course Requirements

The following course requirements are subject to change; for the most current information, visit the department's Water Engineering & Management webpage or the Graduate School's Engineering for Developing Communities webpage.

The professional master's degree requires a total of 30 credit hours, at least 24 of which must be completed at the 5000 level or above. At least 18 credit hours must be from coursework in CVEN.

Areas of Emphasis

Water Engineering & Management Emphasis

This emphasis requires at least 30 credit hours from the following categories.

Code	Title	Credit Hours
Environmental Engineering Core Courses		12
CVEN 5464	Environmental Engineering Processes	
CVEN 5404	Water Chemistry	
CVEN 5484	Applied Microbiology and Toxicology	
One of:		
CVEN 5524	Drinking Water Treatment	
CVEN 5534	Wastewater Treatment	
CVEN 5474	Hazardous and Industrial Waste Management	
WEM Core Courses		6-9
CVEN 5564	Water Profession: Communication and Utility Finance	
CVEN 5574	Water Utility Management: Current Issues and Future Challenges	
CVEN 5584	Water Profession: Financial and Management	
Electives		10-12
Civil engineering electives (3-9 credits).		
Public affairs (CU Denver) electives (0-3 credits).		
Additional courses to fulfill 30-credit minimum, if necessary.		
Master's Report and Seminar		2
Total Credit Hours		30-35

Engineering for Developing Communities Emphasis

This emphasis requires at least 30 credit hours distributed as follows.

Code	Title	Credit Hours
Required Core Courses		
CVEN 5919	Sustainable Community Development 1	3
CVEN 5929	Sustainable Community Development 2	3
CVEN 5939	Sustainable Community Development Field Practicum	3
CVEN 5837	Special Topics for Seniors/Grads (Fieldwork Methods for Development Engineers)	3
Required Competency Areas		
Select one 3-credit course from each competency area:		9
Data Analysis		
Systems Thinking		
Project Management		
Option Area		
Select 9 credits of elective courses in a coherent topic area, selected in conjunction with the student's faculty advisor. Possibilities include:		9
Energy		
Environmental Health		
Construction		
Engineering Management Certificate		
Policy Issues		
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Total Credit Hours		30

Time Limit

All degree requirements must be completed within four years of the date of commencing coursework.