

Online Master of Engineering Degree in Environmental Engineering

Department of Civil and Environmental Engineering
Old Dominion University

The Department of Civil and Environmental Engineering at Old Dominion University offers **Master of Science (M.S.)** and **Master of Engineering (M.E.) degrees in Environmental Engineering** as an **online option** designed for non-resident students. Courses are offered in either synchronous (live weekday evenings) or in asynchronous (archived) mode and may be taken in either format during regular semesters. The degree can be obtained solely through ODU's **online graduate courses** or in combination with approved transfer credits from other institutions. Potential students must apply for and be admitted to the Old Dominion University **Graduate School** to pursue the degree.

Requirements for Admission into the Master's Program

Regular admission requirements include (1) a bachelor's degree in civil or environmental engineering, (2) a 3.00 grade point average (4.00 scale), (3) a 500-word (or less) essay on academic and personal goals, and (4) two letters of recommendation from current or former professors or supervisors.

Applicants with an undergraduate degree in other fields of engineering and science are also welcome and could be admitted provisionally. Provisionally-admitted students may be required to complete prerequisite courses in preparation for the graduate courses that will make up their program of study. Potential prerequisites are listed below.

Potential Prerequisite Courses for Master Programs in Environmental Engineering:

MATH 211	Calculus I
MATH 212	Calculus II
MATH 307	Ordinary. Differential. Equations
MATH 312	Calculus III
PHYS 231N	University Physics
PHYS 232N	University Physics Lab
CHEM 121	Foundations of Chemistry I
CHEM 123	Foundations of Chemistry II
CS 150 or CEE305	Introduction to Programming C++ or CEE Computations
CEE 330	Hydromechanics
CEE 340	Hydraulics & Water Resources
CEE 350	Environmental Pollution & Control

Applicants with non-engineering BS degree and from foreign countries must also submit Graduate Record Examination (GRE) scores. The English proficiency requirement for non-native speakers of English can be met through TOEFL scores or possession of the BS degree from a country where English is the native language. Online graduate admission application can be made through www.admission.odu.edu.

Graduate Online Courses Offered in Civil and Environmental Engineering

The CEE department at ODU offers the following **online graduate courses** in the area of civil and environmental engineering. These classes are categorized as **A**: Upper-level Civil Engineering courses, **B**: Upper-level Environmental Engineering, **C**: Entry-level graduate courses, and **MATH/STAT** course.

Category A (3 credit hours each) – Upper level courses in Civil Engineering

CEE 711 Finite Element Analysis (Fall semester offer)
CEE 715 Engineering Optimization I (Spring)
CEE 722 Cluster Parallel Computing (Summer)
CEE 775 Computational Methods for Transportation Systems (Spring - 2 year cycle)
CEE 782 Design of Coastal Structures (Fall – 2 year cycle)
CEE 787 Dredging & Beach Engineering (Spring – 2 year cycle)
CEE 788 Coastal Hydrodynamics & Sediment Processes (Fall)

Category B (3 credit hours each) – Upper level courses in Environmental Engineering

CEE 650 Pollution Prevention (Summer)
CEE 751 Physicochemical Treatment Processes (Fall)
CEE 752 Biological Wastewater Treatment (Spring – 2 year cycle)
CEE 755 Water Quality Management (Fall – 2 year cycle)
CEE 756 Water Quality Modeling (Fall – 2 year cycle)
CEE 762 Aquatic Chemistry in Environmental Engineering (Spring)
CEE 788 Coastal Hydrodynamics & Sediment Processes (Fall)
(Note: CEE 751, 752, 755, 762: **Core courses** in Environmental Engineering)

Category C (3 credit hours each) – Entry level courses in Civil & Environmental Engineering

CEE 552 Air Quality (Spring)
CEE 554 Hazardous Waste Treatment (Fall)
CEE 558 Sustainable Development (Fall)
CEE 582 Introduction to Coastal Engineering (Spring)

MATH/STAT Category (3 credit)

CEE 700 Civil and Environmental Engineering Experimental Design (Spring)

Visit the department 5-year plan of course offerings at:

<http://www.odu.edu/content/dam/odu/col-dept/cee/docs/five-year-schedule-2014-2019.pdf>

Degree Requirements

M.S. degree in Environmental Engineering requires twenty-four credit hours of graduate courses and six hours of thesis credit. **M.E. in Environmental Engineering degree** has two options; **Project and Course options**. The project option requires twenty-seven credit hours in graduate course work plus a three-credit-hour project. The course option requires thirty credit hours of graduate course work and the student must pass a written final comprehensive examination covering the entire program of study. The required courses for various Master's degree programs are listed below.

Degree Requirements for Master Degrees in Environmental Engineering

M.S.	Credit Hours	M.E. Project Option	Credit Hours	M.E. Course Option	Credit Hours
Core courses (CEE 751,752,755,762)	12	Core courses (CEE 751,752,755,762)	12	Core courses (CEE 751,752,755,762)	12
		B	3	B	6
A, B, C or D	9	A, B, C or D	9	A, B, C or D	9
MATH or STAT	3	MATH or STAT	3	MATH or STAT	3
Thesis	6	Project	3	Comprehensive exam.	
Total Credit Hours	30**	Total Credit Hours	30**	Total Credit Hours	30

** Note: For M.S. and M.E. Project options, no more than 9 credit hours can be at the 500 level.

Available ODU's online (A, B, C, and MATH/STAT categories) courses are listed in the previous section. **Category D** courses are courses which are offered from other programs. These courses must be related to the program of study and must be approved by the student's academic advisor. One graduate **MATH or STAT** course is also required for all options of the program.

Transfer of Graduate Courses from Other Universities (12 credit limit)

A student, in consultation with their academic advisor, can take courses from other institutions and upon successful completion, transfer these courses to ODU to satisfy degree requirements. These courses may be taken on site at a University in your region or by distance learning from another University, as applicable. ODU approves the transfer of **up to 12 credit hours** (typically 4 courses) from other universities (with **grades B or better**) for the graduate degree programs. Courses appearing on transcripts from other Universities and already counted for degrees from other Universities are **not** acceptable for transfer to ODU.

Online M.S. Thesis (6 credits) and M.E. Project (3 Credits)

Students must register for ODU's CEE 699 Master's thesis (6 credits) for the M.S. thesis, or CEE 698 Master's Project (3 credits) for the M.E. project requirement. Thesis/project research can be accomplished through remote or on-site mode, if allowed, with close communication with the advisor. The Internet permits continuous communication between the student and the advisor. Written, oral and visual communication (Webcam) over the Internet makes the thesis/project research effort comparable with students on campus at Old Dominion University in Norfolk, VA.

Online M.S. and M.E. Degrees

The final requirements are acceptance of the project by the Examination Committee and passing the final oral examination for thesis/project options and passing a written comprehensive exam for the course option. Video conferencing facilities are available at ODU to facilitate this last step in the process.

Sample scheduling toward completion of Online Master degrees

In order to plan the classes, visit the site (CEE five year schedule);

<http://www.odu.edu/content/dam/odu/col-dept/cee/docs/five-year-schedule-2014-2019.pdf>

By assuming two courses per semester, below samples allow students to complete M.S. or M.E. degrees in 6 semesters.

M.S. Degree:

Fall 2016: CEE 558 (ABCD course), CEE 755 (Core course)
Spring 2017: CEE 762 (Core course), CEE 700 (MATH/STAT)
Summer 2017: CEE 650 (ABCD course)
Fall 2017: CEE 751 (Core course), CEE 756 (ABCD course)
Spring 2018: CEE 752 (Core course), Preparation for thesis
Fall 2018: CEE 699 (6 credits, Thesis)

M.E. Project option:

Fall 2016: CEE 554 (ABCD course), CEE 558 (ABCD course)
Spring 2017: CEE 762 (Core course), CEE 700 (MATH/STAT)
Summer 2017: CEE 650 (ABCD course)
Fall 2017: CEE 751 (Core course), CEE 756 (B course)
Spring 2018: CEE 752 (Core course), Preparation for project
Fall 2018: CEE 755 (Core course), CEE 689 (Project)

M.E. Course option:

Fall 2016: CEE 554 (ABCD course), CEE 558 (ABCD course)
Spring 2017: CEE 762 (Core course), CEE 700 (MATH/STAT)
Summer 2017: CEE 650 (B course)
Fall 2017: CEE 751 (Core course), CEE 756 (B course)
Spring 2018: CEE 752 (Core course), CEE 552 (ABCD)
Fall 2018: CEE 755 (Core course), Comprehensive examination

Environmental Engineering Faculty

Mujde Erten-Unal, Ph.D. (Missouri University of Science and Technology), Associate Professor, environmental engr.; wastewater treatment; environmental microbiology; hazardous waste treatment; pollution prevention; sustainable development . (Director, Sustainable Development Institute).

J.B. Jones, Ph.D. (Old Dominion University), Adjunct Assistant Professor, air quality/air pollution control; distribution systems water quality,

Sandeep Kumar, Ph.D. (Auburn University), Assistant Professor, sustainable chemical conversion processes; biofuels; thermochemical conversion of biomass; sub- and supercritical water technology; supercritical fluid extraction.

Gangfeng Ma, Ph.D. (U. of Delaware), Assistant Professor, Coastal engineering; estuarine and coastal hydrodynamics; sediment transport; bubbles in the ocean; landslide-induced tsunami; flow-vegetation interaction; computational fluid mechanics.

Peter Pommerenk, Ph.D. (Old Dominion University), Adjunct Assistant Professor, aquatic chemistry, sorption processes, water treatment, physicochemical treatment processes

Gary C. Schafran, Ph.D. (Syracuse Univ.), Professor, environmental engr.; fate and transport of contaminants in natural systems; lake oxygenation; aquatic chemistry; physicochemical treatment processes, reservoir management

Ben J. Stuart, Ph.D. (Rutgers Univ.), **P.E.**, Professor, & **Chair**, environmental engr.; sustainable systems; algal biofuels & bioproducts; waste management nutrient cycling; wastewater treatment.

Navid Tahvildari, Ph.D. (Texas A&M University), Assistant Professor, coastal engr./environmental fluid mechanics; nonlinear wave dynamics, coastal sediment processes, internal waves, ocean mixing, computational fluid dynamics, probabilistic and deterministic inverse modeling .

Xixi Wang, Ph.D. (Iowa State U.) , **P.E.**, Associate Professor, Water resources engineering; hydrological processes; hydrology-vegetation- climate interaction; wetland hydrology; erosion and sedimentation; watershed analysis and modeling; flooding and drought.

Matthias Wittenberg, Dr.-Ing. (Technical University of Braunschweig.) , **P.E.**, DWRE, Adjunct Assistant Professor, Water distribution system and wastewater collection system analysis, modeling and design; wastewater treatment.

Jaewan Yoon, Ph.D. (North Dakota State U.), Associate Professor, environmental engineering; water quality modeling; distributed parameter models; statistical and stochastic methods; nonpoint source pollution; Geographic Information System (GIS).

Contact

For further information, visit <http://www.odu.edu/cee> or contact Graduate Program Director at CEGPD@odu.edu or the department at **757-683-3753**.