**Environmental Engineering program**

**Master of Science in Environmental Engineering (M.S.E.V.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

 **Fall:** February 15

 **Spring:**  October 15

 **Summer:** February 15

**Minimum Total Hours:** 30

**Program Level:** Masters

**CIP Code:** 14.1401

**Dept. Code:** EGX

**Program (Major/College):** EVE EN

**Approved:** 1996

**Concentration**

Engineering for International Development (EFD)

**CONTACT INFORMATION**

**College:** Engineering

**Department:** Civil and Environmental Engineering

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**PROGRAM INFORMATION**

The M.S.E.V. degree provides a student with the opportunity to earn the advanced degree with coursework and a required research thesis. Students must have an accredited first degree in engineering or complete a list of makeup engineering coursework. An optional concentration in Engineering for International Development allows students to combine their graduate education and research with engineering service in the Peace Corps. The M.S.E.V. is a research-oriented degree in which the student writes, as a major part of the degree requirements, a thesis that defines, examines, and reports in depth on a subject area relevant to Environmental Engineering.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

**Major Research Areas:**

The field of Environmental Engineering has long been known for its breadth and ability to adapt to the new technological, societal, and global problems facing the environment. Major research areas include water quality engineering; air quality engineering; fate and transport of contaminants in the environment; environmental biotechnology and nanotechnology; waste management; sustainability and ecological engineering; surface water hydrology and hydraulics; groundwater hydrology; water reuse; green engineering; renewable energy; fate of emerging contaminants; and humanitarian engineering with a focus on the developing world. Graduates of the program are prepared for careers in academia, governmental agencies, nongovernmental organizations (NGOs), or private industry and firms involved in planning, design, research and development, or policy.

The environmental engineering laboratories provide state-of-the-art analytical and experimental equipment for chemical and biological research. Equipment includes an ion chromatograph, atomic absorption spectrophotometer, several gas chromatrographs (including with mass spectometry), HPLC, TOC machine, and environmental chambers. Field research sites are available locally and in several international settings that include developing world communities.

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

* Undergraduate GPA ≥ 3.0 preferred.
* GRE with preferred minimum scores of V 145 (25th percentile), Q 155 (60th percentile), AW 3.0 (15th percentile); or valid Fundamentals of Engineering (FE) certificate. Verification of FE certification should be obtained from the professional engineering (PE) board where the FE certification was obtained. See the CEE department website for more information: <http://www2.eng.usf.edu/cee/graduate/apply.htm>.
* TOEFL (international applicants only) 79 (550 paper-based exam); or IELTS 6.5.
* Two (2) Letters of Reference provided at the time of application. EFD students must submit 3 Letters of Reference.
* Statement of Purpose provided at the time of application.
* Resume provided at the time of application.
* Exceptions made on a case-bay-case basis where warranted.

**DEGREE PROGRAM REQUIREMENTS**

**Total Program Minimum Hours - 30 hours**

Core courses – 12 hours

Concentration/Electives– 12 hours

Thesis – 6 hours

The program consists of a minimum of 24 credit hours of coursework and 6 credit hours of thesis. All students must take three “principles” courses (Physical/Chemical Principles; Biological Principles; Aquatic Chemistry), and at least one “sustainability” course. Students should consult their research advisors for guidance in selecting other coursework.

**Core Courses -12 hours minimum**

ENV 6002 3 Physical Chemical Principles

EES 6107 3 Biological Principles of Environmental Engineering

ENV 6666 3 Aquatic Chemistry

And at least one of the following:

ENV 6617 3 Green Engineering for Sustainability

CGN 6933 3 Resilient Infrastructure for Sustainable Communities)

ENV 6510 3 Sustainable Development Engineering

**Engineering for International Development (EFD) Concentration (Optional) - 9 hours**

This concentration acknowledges coursework and international field experience in the area of engineering for international development that considers issues of sustainable development, water, sanitation, and health (WaSH), gender, and society. This graduate concentration requires: 1) coursework in global health, applied anthropology (medical, environmental, and development), and Water, Sanitation, Hygiene (WaSH) engineering, 2) a development-focused research component, and 3) a long-term overseas field experience in sustainable development as a WaSH engineer, which in most cases will form the basis of the student’s master’s thesis. The international field experience allows a student to remain enrolled as a full-time student (with zero tuition/fees) and gain development experience serving with Peace Corps and Nongovernmental Development Organizations. Graduates are competitive for employment in the global WaSH development field.

ENV 6510 3 Sustainable Development Engineering

A minimum of 1 course (3 credits) from the following applied anthropology courses:

ANG 6766 3 Research Methods in Applied Anthropology

ANG 6730 3 Socio-cultural Aspects of HIV/AIDS

ANG 6469 3 Health, Illness and Culture

A minimum of 1 course (3 credits) from the following global public health courses:

PHC 6764 3 Global Health Principles & Contemporary Issues

PHC 6761 3 Global Health Assessment Strategies

Students engaged in full-time global training and service as part of the EFD concentration (e.g., in the U.S. Peace Corps, with a nongovernmental organization, UNESCO-IHE, or equivalent) may register for CST 6990 for 0 credit hours while in their country of service.

**Elective Courses - 12 hours minimum**

Beyond the core coursework, 12 additional credit hours are required, based on approval of the student’s graduate committee. Students in the EFD Concentration complete the concentration requirements and then one elective course.

**Thesis - 6 hours minimum**

Students pursuing the M.S.E.V. are required to complete at least six (6) credits of Thesis. Students must conduct a suitable research project under the guidance of their thesis advisor, write an original thesis based upon the results of the research project, and defend the thesis to a committee that must subsequently approve the completed thesis. For students in the EFD Concentration, the thesis must be associated with research in a developing-world context.

**Comprehensive Exam**

The thesis and defense are used in lieu of a comprehensive exam.

**COURSES**

 See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)