

ENVIRONMENTAL ENGINEERING PROGRAM

Master of Environmental Engineering (M.E.V.E.) 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 |

CONTACT INFORMATION

| | |
|--------------------|-------------------------------------|
| College: | Engineering |
| Department: | Civil and Environmental Engineering |

| | |
|-----------------------------|--|
| Contact Information: | www.grad.usf.edu |
| Other Resources: | www.usf4you.usf.edu |

PROGRAM INFORMATION

The M.E.V.E. degree provides a student with the opportunity to earn the advanced degree by coursework only. Students must have an accredited first degree in engineering or complete a list of makeup engineering coursework.

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; and groundwater hydrology. Other focus areas include water reuse, green engineering, renewable energy, fate of emerging contaminants, and humanitarian engineering that has a developing world focus.

Graduates of the programs are prepared for careers with 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 equipment for chemical and biological research. Equipment includes an ion chromatograph, atomic absorption spectrophotometer, several gas chromatographs, HPLC, ICPs, 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

- Overall GPA 2.75; GPA in major 3.00
- GRE with preferred minimum scores of V 20%, Q 50%, AW 10% or valid fundamentals of engineering (FE) certificate preferred. 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 6.5 (IELTS)

- Two Letters of Reference
- Statement of Purpose
- Resume
- Exceptions made on a case-by-case basis where warranted.

DEGREE PROGRAM REQUIREMENTS

Total Program Minimum Hours

30 hours

The minimum coursework requirement for the Master of Engineering degrees is 30 credit hours. No research thesis is required. All students must take four principles courses in physical/chemical principles; biological principles; aquatic chemistry, and sustainability and two environmental engineering process elective courses.

Core Courses (required)

12 hours minimum

| | |
|--|---|
| ENV 6002 Physical Chemical Principles | 3 |
| EES 6107 Biological Principles of Environmental Engineering | 3 |
| ENV 6666 Aquatic Chemistry | 3 |
| <u>And one of the following:</u> | |
| CGN 6933 Green Engineering for Sustainability <i>or</i> | 3 |
| CGN 6933 Green Infrastructure for Sustainable Communities) <i>or</i> | 3 |
| ENV 6510 Sustainable Development Engineering | 3 |

Elective Courses (18 additional credits required, two courses must be from this list)

18 hours minimum

| | |
|---|---|
| ENV 6519 Advanced Physical/Chemical Processes in Environmental Engineering | 3 |
| CGN 6933 ENV 6667 Environmental Biotechnology | 3 |
| ENV 6105 Air Pollution Fundamentals | 3 |
| CGN 6933 Air Pollution Engineering <u>Drinking Water Treatment Processes</u> | 3 |
| ENV 6564 Environmental Engineering Design | 3 |

Comprehensive Exam

Portfolio and oral interview are used in lieu of comps

COURSES

See <http://www.ugs.usf.edu/sab/sabs.cfm>

ENVIRONMENTAL ENGINEERING PROGRAM

Master of Science in Engineering Science (M.S.E.S.) 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 |

Concentration

~~Masters International Program (MIP)~~

[Engineering for Development \(EFD\)](#)

CONTACT INFORMATION

| | |
|--------------------|-------------------------------------|
| College: | Engineering |
| Department: | Civil and Environmental Engineering |

Contact Information: www.grad.usf.edu

Other Resources: www.usf4you.usf.edu

PROGRAM INFORMATION

The M.S.E.S. degree provides a student without a first degree in engineering with the opportunity to earn the advanced degree by combining coursework and a research thesis. A ~~Master's International Program~~ [Engineering for Development concentration](#) in Civil & Environmental Engineering allows students to combine their graduate education and research with engineering service in the Peace Corps. The M.S.E.S. 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; and groundwater hydrology. Other focus areas include water reuse, green engineering, renewable energy, fate of emerging contaminants, and humanitarian engineering that has a developing world focus.

Graduates of the programs are prepared for careers with 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 equipment for chemical and biological research. Equipment includes an ion chromatograph, atomic absorption spectrophotometer, several gas chromatographs, HPLC, ICPs, 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

- Overall GPA 2.75; GPA in major 3.00
- GRE with preferred minimum scores of V 20%, Q 50%, AW 10%
- TOEFL (international applicants only) 79 (550 paper-based exam) or 6.5 (IELTS)
- Two (2) Letters of Reference (~~MIP-EFD~~ students must submit 3 letters of reference)
- Statement of Purpose
- Resume
- Exceptions made on a case-by-case basis where warranted.

DEGREE PROGRAM REQUIREMENTS**Total Program Minimum Hours****30 hours**

The programs consist of a minimum of 24 credit hours of coursework and 6 credit hours of thesis. All students must take four principles courses in physical/chemical principles; biological principles; aquatic chemistry, and sustainability and two environmental engineering process courses. An international capstone design course is available that includes a field experience in the developing world.

Core Courses (required)**12 credits**

| | |
|---|---|
| ENV 6002 Physical Chemical Principles | 3 |
| EES 6107 Biological Principles of Environmental Engineering | 3 |
| ENV 6666 Aquatic Chemistry | 3 |
| <u>And one of the following:</u> | |
| CGN 6933 Green Engineering for Sustainability <i>or</i> | 3 |
| CGN 6933 Green Infrastructure for Sustainable Communities <i>or</i> | 3 |
| ENV 6510 Sustainable Development Engineering | 3 |

Elective Courses**12 credits**

12 additional courses required based on approval of graduate committee.

Concentration Requirements 12 credits [HC1]**Masters International Program (MIP)****Engineering for Development (EFD)**

This concentration acknowledges course and international field experience in the area of engineering for development that considers issues of sustainability, environment, health, gender, and society. Requires students take the following four courses that includes an extended international engineering field experience.

ENV 6510 Sustainable Development Engineering

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

| | |
|----------|--|
| ANG 6766 | Research Methods in Applied Anthropology |
| ANG 6730 | Socio-cultural Aspects of HIV/AIDS |
| ANG 6469 | Health, Illness and Culture |
| ANT 4930 | Infectious Diseases |

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

| | |
|----------|--|
| PHC 6764 | Global Health Principles & Contemporary Issues |
| PHC 6761 | Global Health Assessment Strategies |

3 additional credits of coursework in international development engineering or related areas

CST6990 for full time global training and service in the U.S. Peace Corps as part of the Master's International Program Engineering for Development.

~~The six (6) thesis research credits required for the degree are associated with research in a developing world context. [HC2]
— CST 6990 — For full-time global training and service in the U.S. Peace Corps (0 credits)~~

~~Elective Courses~~

~~12 additional courses required based on approval of graduate committee.~~

Comprehensive Exam

Thesis and defense are used in lieu of comps

Thesis

6 hours

COURSES

See <http://www.ugs.usf.edu/sab/sabs.cfm>

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 |

Concentration

~~Masters International Program (MIP)~~
[Engineering for Development \(EFD\)](#)

CONTACT INFORMATION

| | |
|--------------------|-------------------------------------|
| College: | Engineering |
| Department: | Civil and Environmental Engineering |

Contact Information: www.grad.usf.edu
Other Resources: www.usf4you.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. ~~A Master's International Program~~ [Engineering for Development](#) in Civil & Environmental Engineering 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; and groundwater hydrology. Other focus areas include water reuse, green engineering, renewable energy, fate of emerging contaminants, and humanitarian engineering that has a developing world focus.

Graduates of the programs are prepared for careers with 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 chromatographs, HPLC, ICPs, 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

- Overall GPA 2.75; GPA in major 3.00
- GRE with preferred minimum scores of V 20%, Q 50%, AW 10% or valid fundamentals of engineering (FE) certificate preferred. 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 6.5 (IELTS)
- Two (2) Letters of Reference (~~MIP-EFD~~ students must submit 3 letters of reference)
- Statement of Purpose
- Resume
- Exceptions made on a case-by-case basis where warranted.

DEGREE PROGRAM REQUIREMENTS:**Total Program Minimum Hours****30 hours**

The programs consist of a minimum of 24 credit hours of coursework and 6 credit hours of thesis. All students must take four principles courses in physical/chemical principles; biological principles; aquatic chemistry, and sustainability.

Core Courses (required)**12 credits**

| | |
|--|---|
| ENV 6002 Physical Chemical Principles | 3 |
| EES 6107 Biological Principles of Environmental Engineering | 3 |
| ENV 6666 Aquatic Chemistry | 3 |
| <u>And one of the following:</u> | |
| CGN 6933 Green Engineering for Sustainability or | 3 |
| CGN 6933 Green Infrastructure for Sustainable Communities) or | 3 |
| ENV 6510 Sustainable Development Engineering | 3 |

Elective Courses**12 credits**12 additional courses required based on approval of graduate committee.**Concentration Requirements_ 12 credits[HC3]****Masters International Program (MIP)****Engineering for Development (EFD)**

This concentration acknowledges course and international field experience in the area of engineering for development that considers issues of sustainability, environment, health, gender, and society. Requires students take the following four courses that includes an extended international engineering field experience.

ENV 6510 Sustainable Development Engineering

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

| | |
|----------|--|
| ANG 6766 | Research Methods in Applied Anthropology |
| ANG 6730 | Socio-cultural Aspects of HIV/AIDS |
| ANG 6469 | Health, Illness and Culture |
| ANT 4930 | Infectious Diseases |

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

| | |
|----------|--|
| PHC 6764 | Global Health Principles & Contemporary Issues |
| PHC 6761 | Global Health Assessment Strategies |

3 additional credits of coursework in international development engineering or related areas

CST6990 for full time global training and service in the U.S. Peace Corps as part of ~~the Master's International Program.~~—Engineering for Development.

The six (6) thesis ~~research~~ credits required for the degree are associated with research in a developing world context. ~~_____ CST 6990 _____ For full-time global training and service in the U.S. Peace Corps (0 credits)~~

~~Elective Courses~~

~~12 additional courses required based on approval of graduate committee.~~

Comprehensive Exam

Thesis and defense are used in lieu of comps

Thesis

6 credit hours

COURSES

See <http://www.ugs.usf.edu/sab/sabs.cfm>

ENVIRONMENTAL ENGINEERING PROGRAM

Doctor of Philosophy (Ph.D.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Fall: February 15
Spring: October 15
Summer: February 15

Minimum Total Hours: 48/78
Program Level: Doctoral
CIP Code: 14.1401
Dept. Code: EGX
Program (Major/College): ECE EN

CONTACT INFORMATION

College: Engineering
Department: Civil and Environmental Engineering

Contact Information: www.grad.usf.edu
Other Resources: www.usf4you.usf.edu

PROGRAM INFORMATION

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. Other focus areas include water reuse, green engineering, renewable energy, fate of emerging contaminants, and humanitarian engineering that has a developing world focus. 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 chromatographs, HPLC, ICPs, TOC machine, and environmental chambers. Field research sites are available locally and in several international settings that include developing world communities.

The Ph.D. degree is awarded in recognition of demonstrated scholarly competence and ability to conduct and report original and significant research in Environmental Engineering.

Accreditation:

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

Major Research Areas:

Contact Program for information.

ADMISSION INFORMATION

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

Program Admission Requirements

- GRE with preferred minimum scores of V45%, Q 65%, AW 50%.
- TOEFL (International applicants only) 79 (550 paper based exam) or 6.5 (IELTS).
- Resume.
- Three (3) letters of reference.
- Statement of Purpose.

DEGREE PROGRAM REQUIREMENTS:**Total Program Hours:**

For students with an approved master's degree
 For students without a master's degree

48 hours minimum post-masters
 78 hours minimum post-bacc

Coursework requirements**49 hours**

CGN 6945 Graduate Research Methods (1 credit)
 ENV 6002 Physical & Chemical Principles in Environmental Engineering
 EES 6107 Biological Principles
 ENV 6666 Aquatic Chemistry

1 course (3 credits) from the following list of sustainability courses:

CGN 6933 Green Engineering for Sustainability
 CGN 6933 Green Infrastructure for Sustainable Communities
 ENV 6510 Sustainable Development Engineering

33 additional credits of coursework in Environmental Engineering or related areas

Up to 30 credits of coursework from an approved master's degree may be applied to meet the coursework requirements.

Qualifying Exam

Doctoral students are expected to pass a qualifying examination no later than the semester following the completion of 48 credits of coursework beyond a bachelor's degree. At minimum, the exam will include a written dissertation proposal and oral defense by the dissertation committee. A written exam in the area of concentration may also be required. Poor performance on the qualifying exam based on the judgment of the committee may result in the student failing the exam. If a student does not pass on the first attempt, he/she may request in writing to repeat the exam. Students who fail the Qualifying Examination the second time will be dismissed by the program.

Dissertation Requirements**20 hours minimum**

CGN 7980 Dissertation (20 hours minimum)

Additional Requirements**9 hours minimum**

Nine (9) credits of additional coursework, graduate instruction methods, dissertation, or directed research are required.

Publication Requirement

Students must have at least 1 paper accepted to a peer reviewed journal or peer reviewed conference based on their dissertation research.

COURSES

See <http://www.ugs.usf.edu/sab/sabs.cfm>

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