FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—PROGRAM CHANGE REQUEST

UGPC APPROVAL _____

UFS APPROVAL _____

CATALOG _____

DEPARTMENT: CIVIL, ENVIRONMENTAL AND GEOMATICS ENGINEERING

COLLEGE: ENGINEERING AND COMPUTER SCIENCE

PROGRAM NAME: MASTER'S DEGREE IN CIVIL ENGINEERING

EFFECTIVE DATE
(PROVIDE TERM/YEAR)

PLEASE EXPLAIN THE REQUESTED CHANGE(S) AND OFFER RATIONALE BELOW AND/OR ATTACHED:

THE CURRENT PROGRAM HAS 5 TRACKS. TRANSPORTATION WAS NOT INCLUDED TRACKS UNDER THE PRIOR PROGRAM DUE TO A LACK OF FACULTY, BUT THERE IS A DEMAND FOR BOTH AND FACULTY THAT CAN TEACH THESE CLASSES. FOR A NUMBER OF YEARS THE DEPARTMENT HAS BEEN OFFERING 6930 CLASSES TO ADDRESS THE NEED IN THE TRANSPORTATION AND CONSTRUCTION AREA.

THE PROPOSED CHANGE COMBINES THE FIVE CURRENT TRACKS INTO TWO, AND ADDS THE TRANSPORTATION TRACK. THERE ARE A POOL OF CLASSES STUDENTS MUST SELECT FROM, BUT OTHERWISE THE ADVISOR AND STUDENT AGREE ON REMAINING CLASSES AS THEY ARE OFFERED. THE DEPARTMENT HAS DEVELOPED A THREE YEAR ROTATION OF CLASSES THAT COMPORTS WITH THIS CATALOG CHANGE. THE CHANGES ARE ALSO NEEDED TO COMPLY WITH UNIVERSITY AND COLLEGE REQUIREMENTS.

THIS PROPOSAL WILL FORMALIZE THE PROGRAM AS THE DEPARTMENT IS CURRENTLY OPERATING. ALL COURSES HAVE BEEN APPROVED PREVIOUSLY BY THE FACULTY SENATE.

Faculty contact, email and complete phone number:	Consult and list departments that might be affected by the change and attach comments.
Frederick Bloetscher, Ph.D., P.E. **239-250-2423**	**None – the change is only to our department based on classes currently offered**

Approved by:	*Date:*
Department Chair:	1/26/2015
College Curriculum Chair:	1/25/2017
College Dean:	1/30/2015
UGPC Chair:	2/18/15 2/20/15
Graduate College Dean:	2/26/15
UFS President:	
Provost:	

Email this form and syllabus to UGPC@fau.edu **one week before** the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

Civil, Environmental and Geomatics Engineering

Master's Program

Master of Science with Major in Civil Engineering

The mission of the Master of Science with Major in Civil Engineering program is to meet the advanced civil engineering educational needs of recent graduates of undergraduate programs, practicing engineers and those non-engineering professionals wishing to redirect their career paths. Graduates of the program possess these attributes or educational outcomes:

1. Knowledge in civil engineering and related subjects significantly beyond the baccalaureate level;

2. Ability to independently conduct research and/or solve a significant practice-oriented project in civil engineering;

3. Ability to communicate ideas and results professionally in written, oral and graphical forms.

These educational outcomes result from successful completion of a well-planned, rigorous set of courses and a major capstone experience (either a thesis or practice-oriented project).

Students wishing to continue their education but not pursue a formal academic degree are welcome to take graduate courses with the appropriate technical preparation.

Admission Requirements

All students must comply with the University's admission requirements; http://www.fau.edu/spa/gradadmission.php. Once students meet all university requirements, all applications are reviewed on a case-by-case basis. Students with non-engineering bachelor's degrees, click here for additional requirements. Students are normally admitted to the Master of Science with major in Civil Engineering program if they:

1. Possess a baccalaureate degree in Civil Engineering or a closely related engineering field. Students with foreign credentials are required to have a general, not course-by-course, evaluation of their credentials. A GPA evaluation is not necessary. Foreign credentials are evaluated by an independent evaluation service that is a member of the National Association of Credential Evaluation Services (NACES). For a list of member evaluation services, please visit the NACES website at www.NACES.org

2. Have achieved a 3.0 (on a 4.0 scale) grade point average in the last 60 credits of undergraduate work;

3. Have achieved scores of at least 145 (verbal) and 150 (quantitative) on the Graduate Record

Examination (GRE). GRE scores cannot be more than five years old and must be completed before admission to the program;

4. Have demonstrated proficiency in both written and spoken English. Students from non-English-speaking countries are required to take the Test of English as a Foreign Language (TOEFL) and achieve a score of 550 or 213 (computer-based);

5. Agree to abide by the graduate admission requirements of the University as published in the University Catalog;

6. Distance learning students must comply with the College of Engineering and Computer Science guidelines: http://www.fau.edu/academic/registrar/PREcatalog/engineering.php#mast.

Degree Requirements

The degree of Master of Science with major in Civil Engineering is awarded to the candidate who has:

1. Complied with University graduate policies and regulations;

2. Satisfied the University's graduate degree requirements;

3. Satisfactorily completed the appropriate Plan of Study for the degree option selected.

Plan of Study

A Plan of Study is a set of courses and a thesis or project activity chosen and completed in a sequence that meets the needs and interests of the individual student and the degree requirements and other stipulations of the University, College of Engineering and Computer Science and the Department. There is no requirement for master's students to be full-time, nor is there an on-campus service requirement. The Plan of Study must be approved by the student's supervisory committee and the Department no later than the end of the student's first semester in the program, regardless of the number of credits earned. After this time, modifications must be approved by the supervisory committee.

Degree Options

Two options are available to students pursuing the M.S. with major in Civil Engineering degree: the thesis option and the project option. Both options are described below. In each case, a minimum cumulative grade point average of 3.0 is required on all coursework attempted.

Master of Science with Major in Civil Engineering with Thesis (total 30 credits))

1. Requires 6 credits of Masters thesis, and

2. Requires 24 credits of approved coursework with the following constraints:

a. Minimum of 15 credits at the 6000 level;

b. Minimum of 12 credits in CEGE courses;

c. Maximum of 6 credits of CEGE courses at the 4000 level can be applied towards the degree.

Master of Science with Major in Civil Engineering with Project (total 33 credits)

1. Requires 3 credits of Masters Project, and

2. Requires 30 credits of approved coursework with the following constraints:

a. Minimum of 18 credits at the 6000 level;

b. Minimum of 21 credits in CEGE courses;

c. Maximum of 6 credits of CEGE courses at the 4000 level can be applied towards the degree.

Program Concentrations

Areas of concentration are:

- Structural/Geotechnical Engineering
- Transportation/Geomatics Engineering
- Water Resources/Environmental Engineering

All Master of Science with Major in Civil Engineering students, without exception, complete one concentration which includes a minimum of two core classes chosen from a list of 4 for each concentration. Note: No more than 3 credits of directed independent study may be applied towards the degree. All course selections must be part of an approved plan of study.

Structural/Geotechnical Engineering Core	
Soil Stabilization/Geosynthetics	CEG 6124
Advanced Structural Analysis	CES 6106
Bridge Design	CES 6325
Structural Dynamics	CES 6585
Prestressed Concrete	CES 6715
Coastal Structures	EOC 6430

Transportation/Geomatics Engineering Core	
Sustainable Public Transportation	TTE 6651
Highway Engineering	TTE 6507
Intelligent Transportation Systems	TTE 6272
Maritime Freight and Cargo	TTE 6506
Traffic Signal Systems	TTE 6256

Water Resource/Environmental Engineering Core	
Water Supply and Treatment	ENV 6418
Wastewater Engineering	ENV 6507
Water Resource System Engineering	CWR 6818
Groundwater Flow	CWR 6125
Open Channel Hydraulics	CWR 6235
Dynamic Hydrology	CWR 6525

Business Minor

Students electing to complete a Business minor must follow the College of Engineering and Computer Science guidelines in http://www.fau.edu/academic/registrar/PREcatalog/engineering.php#mast.

Program Supervision

All students (thesis or project option) must select a supervisory committee. The supervisory committee must contain at least three members. The supervisory committee will review and approve the student's plan of study. The chair of the committee and at least one of the other members must be chosen from the Department faculty. The third member may be chosen from the Department faculty or from outside the Department in accordance with the University guidelines established in the Graduate Governance document. The third member may be a professional from the practicing engineering community. All members of the committee should have doctoral degrees.

The Thesis

The master's thesis is a comprehensive original work that contributes to the understanding of an engineering problem.

The thesis is presented at an oral defense, the time and date of which must be approved by the supervisory committee. A minimum of two weeks prior to the anticipated defense, the written thesis must be delivered to the supervisory committee in the format described in a document

titled Requirements and Guidelines for Graduate Theses and Dissertations that is available from the FAU Graduate College.

The supervisory committee determines the format of the defense and, in private consultation at the completion of the oral defense, whether or not the defense was successful and the thesis is acceptable in scope and quality.

Students are expected to provide updates on their progress each semester, both written and oral. A progress report is required to record a satisfactory progress grade for thesis credits. It is expected that, at a minimum, one peer-reviewed paper will be submitted as part of the thesis option. At a minimum, one presentation or poster at a conference is also expected.

The Practice-Oriented Project

The practice-oriented project applies concepts and methodologies to the solution of a practical engineering problem. The project may be job-related but must not reproduce significantly a job-related product. The supervisory committee must approve the project topic and scope.

A project defense is to be presented before the supervisory committee at a time and place approved by the committee. A minimum of two weeks prior to the anticipated meeting, the written project report must be delivered to the supervisory committee Members. The supervisory committee determines, in private consultation at the completion of the presentation, whether or not the project and the report are acceptable in scope and quality.

Transfer Credits

A maximum of 9 credits of graduate-level work earned at FAU as an undergraduate or while in non-degree status at FAU and a maximum of 6 credits transferred from another regionally or nationally accredited institution may be used to satisfy M.S. with major in Civil Engineering degree requirements subject to the following restrictions:

1. The student must present a transcript identifying the course in which the student earned a grade of "B" or better, along with a catalog/course description.

2. The course must not have been counted toward any other graduate degree awarded or to be awarded to the student.

3. The course is relevant to the student's approved Plan of Study.

4. No credit earned ten or more years before the degree is awarded may be counted toward the M.S. with major in Civil Engineering degree program. Credits transferred into or applied to the program are considered as earned in the first semester of enrollment.

Professional Licensing

Engineering is a regulated profession, and many civil engineers become licensed Professional Engineers (P.E.) through a process of examination and certification of engineering experience. Since undergraduate experience and training varies considerably among graduate students, students should contact the Florida Board of Professional Engineers for specific information about eligibility to sit for the licensing examinations. Note that completion of a Master's degree in engineering is not sufficient to qualify students from non-engineering backgrounds for licensure in Florida, and such students may not refer to themselves as "engineers" in Florida in accordance with CH 287.055 F.S. Where there are questions, students are asked to contact the Florida Board of Professional Engineers directly. The Florida Board of Professional Engineer's address is:

Florida Board of Professional Engineers
2507 Callaway Road, Suite 200
Tallahassee, Florida 32303-5268
850-521-0500 (Telephone)
850-521-0521 (Fax)
www.fbpe.org/

Financial Aid

Full-time students may be considered for a graduate assistantship, which provides part-time employment in the Department. Full or partial tuition waivers may also be awarded to graduate assistants. The number of assistantships is limited, and they are awarded on the basis of the technical area of interest, the student's experience, and academic record. Interested students should contact the Department. Other financial aid opportunities also may be available through the University. Contact the FAU Student Financial Aid Office for more information..

Civil, Environmental and Geomatics Engineering

Master's Program

Master of Science with Major in Civil Engineering

The mission of the Master of Science with Major in Civil Engineering program is to meet the advanced civil engineering educational needs of recent graduates of undergraduate programs, practicing engineers and those non-engineering professionals wishing to redirect their career paths. Graduates of the program possess these attributes or educational outcomes:

1. Knowledge in civil engineering and related subjects significantly beyond the baccalaureate level;

2. Ability to independently conduct research and/or solve a significant practice-oriented project in civil engineering;

3. Ability to communicate ideas and results professionally in written, oral and graphical forms.

These educational outcomes result from successful completion of a well-planned, rigorous set of courses and a major capstone experience (either a thesis or practice-oriented project).

Students wishing to continue their education but not pursue a formal academic degree are welcome to take graduate courses with the appropriate technical preparation.

Admission Requirements

All students must comply with the University's admission requirements; http://www.fau.edu/spa/gradadmission.php. Once students meet all university requirements, a~~A~~ll applications are reviewed on a case-by-case basis. Students with non-engineering bachelor's degrees, click here for additional requirements. Students are normally admitted to the Master of Science with major in Civil Engineering program if they:

1. Possess a baccalaureate degree in Civil Engineering or a closely related engineering field. Students with foreign credentials are required to have a general, not course-by-course, evaluation of their credentials. A GPA evaluation is not necessary. Foreign credentials are evaluated by an independent evaluation service that is a member of the National Association of Credential Evaluation Services (NACES). For a list of member evaluation services, please visit the NACES website at www.NACES.org~~international degrees must have their credentials evaluated by an approved evaluator. Contact the Graduate College for more information. Prospective students without an engineering degree will be evaluated on a case-by-case basis;~~

2. Have achieved a 3.0 (on a 4.0 scale) grade point average in the last 60 credits of undergraduate work;

3. Have achieved scores of at least 145 (verbal) and 150 (quantitative) on the Graduate Record Examination (GRE). GRE scores cannot be more than five years old and must be completed before admission to the program;

4. Have demonstrated proficiency in both written and spoken English. Students from non-English-speaking countries are required to take the Test of English as a Foreign Language (TOEFL) and achieve a score of 550 or 213 (computer-based);

~~5. Have provided three letters of recommendation attesting to the student's potential for graduate studies in civil engineering;~~

~~6~~5. Agree to abide by the graduate admission requirements of the University as published in the University Catalog;

~~7~~6. Distance learning students must comply with the College of Engineering and Computer Science guidelines: http://www.fau.edu/academic/registrar/PREcatalog/engineering.php#mast. ~~As distance learning (DEDECS) students, have indicated to the Department their intention to pursue a master's degree by the end of the third DEDECS class taken at FAU.~~

Degree Requirements

The degree of Master of Science with major in Civil Engineering is awarded to the candidate who has:

1. Complied with University graduate policies and regulations;

2. Satisfied the University's graduate degree requirements;

3. Satisfactorily completed the appropriate Plan of Study for the degree option selected.

Plan of Study

A Plan of Study is a set of courses and a thesis or project activity chosen and completed in a sequence that meets the needs and interests of the individual student and the degree requirements and other stipulations of the University, College of Engineering and Computer Science and the Department. ~~Prior to or immediately upon admission to the program, students should discuss their options with the graduate advisor for the Department.~~ There is no requirement for master's students to be full-time, nor is there an on-campus service requirement. The Plan of Study must be approved by the student's supervisory committee and the Department ~~graduate advisor and the student's supervisory committee~~ no later than the end of the student's first semester in the program, regardless of the number of credits earned. After this time, modifications must be approved by the supervisory committee.

Degree Options

Two options are available to students pursuing the M.S. with major in Civil Engineering degree: the thesis option and the project option. Both options are described below. In each case, a minimum cumulative grade point average of 3.0 is required on all coursework attempted.

Master of Science with Major in Civil Engineering (with Thesis (total 30 credits))

1. Requires 6 credits of Masters thesis, and

2. Requires 24 credits of approved coursework with the following constraints:

a. Minimum of 15 credits at the 6000 level;

b. Minimum of 12 credits in CEGE courses;

c. Maximum of 6 credits of CEGE courses at the 4000 level can be applied towards the degree.

~~This degree requires a minimum of 30 credits: 24 credits of coursework following one of the program concentrations and a 6-credit thesis that is successfully completed and defended at an oral examination. Up to 6 credits may come from 4000-level undergraduate courses. All students receiving financial support from the Department are required to complete the thesis option.~~

Master of Science with Major in Civil Engineering (with Project (total 33 credits)

1. Requires 3 credits of Masters Project, and

2. Requires 30 credits of approved coursework with the following constraints:

a. Minimum of 18 credits at the 6000 level;

b. Minimum of 21 credits in CEGE courses;

c. Maximum of 6 credits of CEGE courses at the 4000 level can be applied towards the degree.

~~This degree requires a minimum of 33 credits: 30 credits of coursework following one of the program concentrations and a 3-credit, practice-oriented project. Up to 6 credits may come from 4000-level undergraduate courses.~~

~~This catalog contains statements of regulations that apply to all graduate students. Of particular interest are the sections on Admissions, Degree Programs and Degree Requirements. Statements referring to foreign language requirements do not apply to Civil Engineering Master of Science majors.~~

Program Concentrations

Areas of concentration are ~~listed below~~:

- Structural/Geotechnical Engineering
- Transportation/Geomatics Engineering
- Water Resources/Environmental Engineering
- ~~Construction Engineering~~

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~~. All M.S. in Civil Engineering students, without exception, complete one concentration which includes a minimum of four classes, plus two general classes and graduate courses. Each degree option described above has provision for coursework beyond the selected concentration. Thus, considerable breadth in the student's program is possible. All course selections must be part of an approved program of study.~~ All Master of Science with Major in Civil Engineering students, without exception, complete one concentration which includes a minimum of two core classes chosen from a list of 4 for each concentration. Note: No more than 3 credits of directed independent study may be applied towards the degree. All course selections must be part of an approved plan of study.

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Structural/Geotechnical Engineering Core	
~~Core (all required)~~	
~~Advanced Mechanics of Materials for Civil Engineering~~	~~CES 6107~~
~~Finite Element Methods in Civil Engineering~~	~~CES 6119~~
~~Advanced Reinforced Concrete~~	~~CES 6706~~
~~(General Class)Depth (select four)~~	
~~Advanced Structural Analysis~~	~~CES 6106~~
~~Bridge Design~~	~~CES 6325~~
~~Advanced Concrete Materials~~	~~CES 6502~~
~~Structural Dynamics~~	~~CES 6585~~
~~Advanced Steel Structures~~	~~CES 6607~~
~~(General Class)~~	

~~Advanced Reinforced Concrete~~	~~CES 6706~~
~~Advanced Mechanics of Materials for Civil Engineering~~	~~CES 6107~~
~~Prestressed Concrete~~	~~CES 6715~~
~~Electives~~	
~~Select two courses for thesis option or four courses for project option from Department list.~~	
Soil Stabilization/Geosynthetics	CEG 6124
Advanced Structural Analysis	CES 6106
Bridge Design	CES 6325
Structural Dynamics	CES 6585
Prestressed Concrete	CES 6715
Coastal Structures	EOC 6430

~~Geotechnical~~ Transportation/Geomatics Engineering	
Core ~~(all required)~~	
~~Advanced Mechanics of Materials for Civil Engineering~~Sustainable Public Transportation	~~CES 6107~~TTE 6651
Highway Engineering ~~Finite Element Methodsin Civil Engineering~~	~~CES 6119~~TTE 6507
Intelligent Transportation Systems	TTE 6272
Maritime Freight and Cargo	TTE 6506
~~Depth (select four)~~	
~~Advanced Soil Mechanics~~	~~CEG 6015~~
~~Advanced Foundation Engineering~~	~~CEG 6105~~
~~Geotechnology of Waste Management~~	~~CEG 6113~~
~~Soil Stabilization and Geosynthetics~~	~~CEG 6124~~
~~Pavement Analysis and Design~~	~~CEG 6129~~
~~Numerical Methods in Geotechnical Engineering~~Traffic Signal Systems	~~CEG 6505~~TTE 6256
~~Groundwater Flow~~	~~CWR 6125~~
~~Electives~~	
~~Select two courses for thesis option or four courses for project option from Department list.~~	

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~~Airport Planning and Design~~	~~TTE 6526~~
~~Transportation Systems Analysis~~	~~TTE 5501~~
~~Transportation and Supply Chain Management~~	~~TTE 6507~~
~~Intelligent Transportation Systems~~	~~TTE 6272~~
~~Traffic Signal Systems~~	~~TTE 6256~~
~~Terrestrial Laser Scanning~~	~~CEG 5304~~
~~Railroad Engineering~~	~~TTE 6700~~
Traffic Signal Systems	TTE 6256

Water Resource/Environmental Engineering	
Core ~~(offered on a two year rotationall required)~~	
~~Air Pollution and Control~~	~~ENV 6115~~
~~Solid Waste Management~~	~~ENV 6356~~
Water Supply and Treatment	ENV 6418
Wastewater Engineering	ENV 6507
Water Resource System Engineering	CWR 6818
~~Modeling Methods in Water Resources and Environmental Engineering~~	~~EES 6025~~
~~Environmental Systems and Processes~~	~~ENV 6668~~
~~Air Pollution and Control~~	~~ENV 6115~~
~~Solid Waste Management~~	~~ENV 6356~~
~~Depth (select four)~~	
Groundwater Flow	CWR 6125
Open Channel Hydraulics	CWR 6235
~~River Mechanics and Sediment Transport~~	~~CWR 6236~~
Dynamic Hydrology	CWR 6525
~~Water Resource System Engineering~~	~~CWR 6818~~
~~Stream, Lake and Estuarine Pollution~~	~~EES 6357~~
~~Electives~~	
~~Select two courses for thesis option or four courses for project option from Department list.~~	

~~Environmental EngineeringConstruction Engineering~~

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Core (all requiredOffered annually or jointly via agreement with Florida International University)	
Modeling Methods in Water Resources and Environmental EngineeringConstruction Management	EES 6025CCE 6031
Environmental Systems and ProceInfrastructure System Managementsses	ENV 6668CCE 6032
Depth (select four)	
Groundwater Contamination	CEG 6708
Stream, Lake and Estuarine Pollution	EES 6357
Air Pollution and Control	ENV 6115
Solid Waste Management	ENV 6356
Water Supply and Treatment	ENV 6418
Wastewater Engineering	ENV 6507
Electives	
Select two courses for thesis option or four courses for project option from Department list.	

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Business Minor

Students electing to receive complete a Business minor complete 15 credits selected from the College of Business approved course list found at the beginning of this College of Engineering and Computer Science section under the heading Business Minor. Up to 6 credits of electives may be used to satisfy this requirement. The remaining 9 credits are in addition to the total credits normally required for the M.S. degree in Civil Engineering. Thus, with the Business minor, at least 39 credits of coursework are required for the thesis option and 42 credits for the project option. must follow the College of Engineering and Computer Science guidelines in http://www.fau.edu/academic/registrar/PREcatalog/engineering.php#mast

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Admission to Candidacy

The Plan of Study must be approved and formally submitted to the Graduate College no later than the end of the student's first semester in the program, regardless of the number of credits earned. The Plan of Study includes all coursework and thesis work that the student expects to complete for the M.S. degree.

For students electing one of the project options, the same process should be followed. However, the orientation of the project should be toward solving an established problem (including a brief research component and comparison of options) that will demonstrate the advanced application

~~of engineering principles. The project should be identified by the end of the student's second semester in the program regardless of the number of credits completed.~~

Program Supervision

~~The Department has a graduate advisor who will help all graduate students with course selections as they progress toward their degree and ensure students meet all requirements. The graduate advisor will assist students with identifying interest areas, thesis or project topic ideas, which will lead to the student's selection of the student's committee chair.~~

All students (thesis or project option) must select a supervisory committee. The supervisory committee ~~has~~ must contain at least three members. The supervisory committee ~~It~~ will review and approve the student's ~~program~~ plan of study. The chair of the committee and at least one of the other members must be chosen from the ~~Civil Engineering~~Department faculty. The third member may be chosen from the Department~~Civil Engineering~~ faculty or from outside the Department in accordance with the University guidelines established in the Graduate Governance document. The third member may be a professional from the practicing engineering community. All members of the committee should have doctoral degrees.

~~The student should obtain the consent of all members to serve on the supervisory committee. The supervisory committee also acts as the research committee and guides the development and completion of the thesis. Thus, the supervisory committee members should be selected so that areas relevant to the thesis research are fully represented. The Department graduate advisor provides overall supervision of all graduate programs.~~

The Thesis

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The master's thesis is a comprehensive original work that contributes to the understanding of an engineering problem. ~~Students can expect to focus much of their academic effort for at least two semesters on completion of a thesis. Students planning to continue graduate studies to the doctoral level are strongly encouraged to select the thesis option. The supervisory committee approves the thesis topic as part of the Plan of Study.~~

The thesis is presented at an oral defense, the time and date of which must be approved by the supervisory committee. A minimum of two weeks prior to the anticipated defense, the written thesis must be delivered to the supervisory committee in the format described in a ~~pamphlet~~ document titled Requirements and Guidelines for Graduate Theses and Dissertations that is available from the FAU Graduate College. ~~The time and location of the defense will be announced to the entire College of Engineering and Computer Science community through email and physical postings one week prior to the scheduled defense.~~

The supervisory committee determines the format of the defense and, in private consultation at the completion of the oral defense, whether or not the defense was successful and the thesis is acceptable in scope and quality.

Students are expected to provide updates on their progress each semester, both written and oral. A progress report is required to record a satisfactory progress grade for thesis credits. It is expected that, at a minimum, one peer-reviewed paper will be submitted as part of the thesis option. At a minimum, one presentation or poster at a conference is also expected.

The Practice-Oriented Project

The practice-oriented project applies concepts and methodologies to the solution of a practical engineering problem. The project may be ~~job~~ job-related but must not reproduce significantly a job-related product. ~~The project shall have a theoretical or research component and compare more than one option to demonstrate why the project is or is not worth pursuing.~~ The supervisory committee must approve the project topic and scope.

A project defense is to be presented before the supervisory committee at a time and place approved by the committee. A minimum of two weeks prior to the anticipated meeting, the written project report must be delivered to the supervisory committee ~~chair and a faculty reader appointed by the graduate advisor.~~ Members. ~~The time and location of the seminar will be announced to the entire College of Engineering and Computer Science community through email and physical postings one week prior to the scheduled seminar. The graduate advisor determines the format of the seminar.~~ The ~~graduate advisor and the appointed faculty reader~~supervisory committee ~~determine~~s, in private consultation at the completion of the presentation, whether or not the project and the report are acceptable in scope and quality.

~~Course Load and Satisfactory Progress~~

~~A full-time load is defined as a minimum of 9 credits in the fall semester, 9 credits in the spring semester and 6 credits in the summer semester. All international students must be registered as full-time students. No student may take more than 15 credits in a given semester.~~

~~An evaluation of progress toward completion of the degree will be conducted at least once per semester. For project-option students, this is a responsibility of the graduate advisor. For thesis-option students, the supervisory committee conducts the review.~~

~~A graduate student whose academic performance is deemed unsatisfactory will be denied further registration in the program. Unsatisfactory academic performance is defined as failure to maintain a minimum 3.0 GPA in all FAU graduate program courses at the end of the second term of enrollment, regardless of the number of credits attempted. No graduate credit may be earned for courses completed with "C-," "D+," "D," "D-," "F" or "U" even if grades in other courses bring the average up to a 3.0.~~

~~Thesis-option students are reviewed for satisfactory progress on their theses. If at any time the progress toward the student's thesis is found to be unsatisfactory, the supervisory committee reports the concern to the graduate advisor, informs the student in writing as to the nature of the deficiencies and records the committee's concern in the student's file. The student will be given~~

~~ample opportunity to improve performance and defend the student's position at a meeting with the graduate advisor and academic advisor approximately 60 days after the initial report of concern. If no improvement has been demonstrated, the student's future program, including the continuation of any financial assistance from the Department, will be reevaluated and the student may be denied further registration in the program.~~

~~Project-option students are also reviewed for satisfactory progress on their projects. If at any time the progress toward the student's project is found to be unsatisfactory, the graduate advisor reports the concern to the graduate advisor, informs the student in writing as to the nature of the deficiencies, and records the academic advisor's concern in the student's file. The student will be given ample opportunity to improve performance and defend the student's position at a meeting with the graduate advisor and academic advisor approximately 60 days after the initial report of concern. If no improvement has been demonstrated, the student's future program, including the continuation of any financial assistance from the Department, will be reevaluated and the student may be denied further registration in the program.~~

Transfer Credits

A maximum of 9 credits of graduate-level work earned at FAU as an undergraduate or while in non-degree status at FAU and a maximum of 6 credits transferred from another regionally or nationally accredited institution may be used to satisfy M.S. with major in Civil Engineering degree requirements subject to the following restrictions:

1. The student must present a transcript identifying the course in which the student earned a grade of "B" or better, along with a catalog/course description.

2. The course must not have been counted toward any other graduate ~~or undergraduate~~ degree awarded or to be awarded to the student.

3. The course is relevant to the student's approved Plan of Study.

4. No credit earned ~~seven~~ ten or more years before the degree is awarded may be counted toward the M.S. with major in Civil Engineering degree program. Credits transferred into or applied to the program are considered as earned in the first semester of enrollment.

~~Division of Engineering Distance Education and Career Services (DEDECS)~~
~~DEDECS is designed to deliver courses via the Internet using video streaming and podcast formats. Degree-seeking students completing courses through DEDECS must follow all degree requirements and regulations. The only exception is that 15 credits of courses taken at other partnering institutions in Florida may be transferred into the M.S. in Civil Engineering program. Program concentration courses may be satisfied with courses from other partnering institutions provided they are substantially equivalent to the Department courses. Equivalency is determined by the graduate advisor. Distance-delivered courses from non-partnering institutions are subject to the normal 6-credit transfer limit and are included in the 15-credit DEDECS transfer limit.~~

DEDECS students are required to meet the requirements of all other graduate students in the Department. All DEDECs students are required to select a committee chair, committee and a thesis or project that demonstrates understanding and ability to research and apply engineering principles in a manner similar to non-DEDECS students. This includes periodic on-campus presentations and conveyance of work products to demonstrate that the student is making progress.

Undergraduate Background Courses for Students Without Baccalaureate Degrees in Civil Engineering

The Civil Engineering faculty welcomes students from other disciplines to the M.S. program. In order to ensure that all students are prepared for graduate work in civil engineering, the Department requires the completion of certain undergraduate background courses. This set is determined by the graduate advisor or the supervisory committee depending on the option selected and will vary according to the student's needs and background. The following list provides guidance. Equivalent courses may be completed at other institutions with the permission of the graduate advisor and/or supervisory committee. The set of required undergraduate courses must be completed before any graduate courses are attempted.

Mathematics (15 credits)
1. A full calculus sequence, including MAC 2311 (4), MAC 2312 (4) and MAC 2313 (4).

2. Ordinary differential equations, MAP 2302 (3).

Basic Sciences (11 credits)
1. One semester of general chemistry and laboratory, CHM 2045 (3) and CHM 2045L (1).

2. Two semesters of calculus-based physics, PHY 2043 (3), PHY 2044 (3) and one physics laboratory, PHY 2048L (1).

Engineering (21 credits)
1. A mechanics sequence (9 credits) consisting of Statics, EGN 3311 (3); Dynamics, EGN 3321 (3); and Strength of Materials, EGN 3331 (3).

2. A civil engineering sequence (12 credits) consisting of a coherent set of courses in water resources engineering, environmental engineering, geotechnical engineering and/or structural engineering suited to the student's program of study.

3. At least two engineering laboratory courses are included in the undergraduate civil engineering courses.

Computer Programming (3 credits)
1. A course in computer programming using any modern programming language.

Professional Licensing

Engineering is a regulated profession, and many civil engineers become licensed Professional Engineers (P.E.) through a process of examination and certification of engineering experience. Since undergraduate experience and training varies considerably among graduate students, students should contact the Florida Board of Professional Engineers for specific information about eligibility to sit for the licensing examinations. Note that completion of a ~~Mater:s~~Master's degree in engineering is not~~maybe~~ sufficient to qualify students from ~~other~~non-engineering backgrounds for licensure in Florida, and such students may not refer to themselves as "engineers" in Florida in accordance with CH 287.055 F.S. ~~Completion of the M.S. degree does not automatically qualify students to sit for licensing examinations, especially if their undergraduate degrees are not from accredited engineering programs~~ Where there are questions, students are asked to contact the Florida Board of Professional Engineers directly. The Florida Board of Professional Engineer~~'. The Board~~'s address is:

Florida Board of Professional Engineers
2507 Callaway Road, Suite 200
Tallahassee, Florida 32303-5268
850-521-0500 (Telephone)
850-521-0521 (Fax)
www.fbpe.org/

Financial Aid

Full-time students may be considered for a graduate assistantship, which provides part-time employment in the Department. Full or partial tuition waivers may also be awarded to graduate assistants. The number of assistantships is limited, and they are awarded on the basis of the technical area of interest, the student's experience, and academic record, ~~and letters of recommendation.~~ Interested students should contact the Department. Other financial aid opportunities also may be available through the University. Contact the FAU Student Financial Aid Office for more information.~~graduate advisor~~.

~~Graduate research assistants work on research projects conducted in the Department, are required to pursue one of the thesis options, and their project work usually serves as the basis for their theses. Graduate teaching assistants are assigned to assist faculty members with conducting one or more courses and may pursue either the thesis option or project option.~~

~~Cooperative education and internship programs are available, providing part-time employment in engineering firms. Contact the Office of Engineering Career Development, 561-297-2694, for more information.~~

~~Other financial aid opportunities may be available through the University. Contact the FAU Student Financial Aid Office for more information.~~