
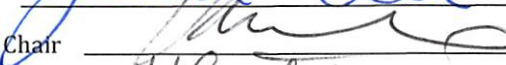
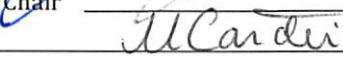
 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ Banner Posted _____ Catalog _____
	Department Ocean & Mechanical Engineering College Engineering and Computer Science		
Program Name MS Ocean Engineering, MS Mechanical Engineering	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date <i>(TERM & YEAR)</i> Spring 2019	
Please explain the requested change(s) and offer rationale below or on an attachment For the MS non-thesis programs in Ocean Engineering, and Mechanical Engineering we request to change the minimum number of credits from 33 to 30.			
Faculty Contact/Email/Phone Dr. Francisco Presuel-Moreno, 954-924-7236 fpresuel@fau.edu		Consult and list departments that may be affected by the change(s) and attach documentation This change does not affect any other Department.	
Approved by Department Chair  College Curriculum Chair  College Dean  UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date 9-21-18 9-24-18 9/24/2018 _____ _____ _____ _____	

Email this form and attachments to UGPC@fau.edu one week before the UGPC meeting so that materials may be viewed on the UGPC website prior to the meeting.

Ocean and Mechanical Engineering

Ocean Engineering

COMBINED PROGRAM

B.S.O.E. to M.S. Degree Program

The Department of Ocean and Mechanical Engineering offers a combined Bachelor of Science in Ocean Engineering to Master of Science degree program. For students taking the thesis or non-thesis option, up to 9 credits of graduate coursework (5000 level or higher) in the B.S.O.E. program may be counted for both the B.S.O.E. and M.S. degrees. With an approximate duration of five years, this combined program provides an attractive way for students to continue their graduate work.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the [Transition Guides](#).

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Admission Requirements

To be eligible for the joint B.S.O.E./M.S. program, students should:

1. Have an overall GPA of above 3.0 and a GPA of above 3.25 in the last 60 credits of coursework completed at the time of admission. The GPA must be maintained until graduation from the B.S. degree;
2. Formally apply to the joint program, completing the admissions process at least one semester prior to the beginning of the M.S. portion of their program;
3. Choose either the thesis or non-thesis option for the M.S. part of the program.

Once admitted to the program, students begin taking graduate courses in their senior year that would apply to both the bachelor's and master's degree programs. A maximum of 9 credits of elective courses can be applied to both programs. Students in the joint program must maintain enrollment to remain in good standing. Students must also meet all the degree requirements of the graduate program, including core courses and prerequisites. Those students who complete the M.S. degree program within one year after the completion of their B.S.O.E. degree program will be presented with a certificate of recognition.

MASTER'S PROGRAM

[Link to graduate certificates](#)

The graduate program is structured around a core of courses central to ocean engineering and encompassing the subjects of acoustics, corrosion, physical oceanography, hydrodynamics, advanced mechanics of materials, marine systems and advanced mathematics. This core provides, at an advanced level, the fundamentals required for engineering work in the ocean environment. Additional courses in the fields of acoustics, hydrodynamics, marine materials, offshore structures, coastal engineering and marine vehicles are offered to enable students to pursue areas of interest. A summer program is offered by the department for graduate students attending on a year-round basis.

Financial Aid

Most full-time graduate students in the department receive financial support, usually in the form of graduate assistantships. Graduate assistants normally work on research projects conducted in the department, and their project work usually serves as a basis for their thesis/dissertation. Teaching Assistantships also may be available.

From time to time, graduate assistants are assigned to help a faculty member conduct a course, but direct teaching assignments are not permitted and regular lecture assignments should not be anticipated. Departures from this rule may be considered only for exceptional students with demonstrated teaching abilities.

Several graduate assistantships are available each year and are awarded on the basis of the technical area of interest, the applicant's experience, overall academic record and letters of recommendation. The current stipends for assistantships are \$17,000 for master's students and \$22,000 for Ph.D. students, after admittance to candidacy, for 12 months of service on a half-time basis, plus tuition costs.

GRADUATE COLLEGE

SEP 25 2018

Received

Application for Admission

Students are encouraged to begin their graduate studies in the fall semester. Applications for admission should be initiated about one year in advance of the desired starting date and should be filed as early as possible, preferably in the early fall. Normally notification of admission is given several weeks after receipt of the completed application. Depending upon the student's background, certain preparatory courses may be required to make up for deficiencies before full admission to the program is granted. These courses may be taken at FAU.

Application material for admission to the degree programs in Ocean Engineering can be obtained by:

1. Accessing www.fau.edu/graduate/

2. Sending a request to:
Florida Atlantic University
Graduate College, SU 80, Room 101
777 Glades Road, P.O. Box 3091
Boca Raton, Florida 33431-0991

3. Sending a request to:
Graduate Program Administrative Assistant
Department of Ocean and Mechanical Engineering, Bldg. 36, Rm. 182
777 Glades Road, P.O. Box 3091
Boca Raton, Florida 33431-0991



Master of Science with Major in Ocean Engineering

Three major paths to the Master of Science with major in Ocean Engineering are available to graduate students. Students with non-engineering bachelor's degrees, click [here](#) for additional requirements.

Thesis Option

The thesis option requires a minimum of 30 credits, including a minimum of 6 thesis credits. At least 15 of the credits must be taken from the Ocean Engineering core course list (see core course requirements section). In addition, 9 credits will be selected in consultation with the student's advisor. At least 15 of the 30 credits must be at the 6000 level. Students electing the thesis option will be required to complete the thesis program, which includes successful defense and completion of the thesis.

Non-Thesis Option

This option requires a minimum of ~~33-30~~ credits. At least 15 of the credits must be taken from the Ocean Engineering core course list (see core course requirements section). In addition, ~~18-15~~ credits will be selected in consultation with the student's advisor. No thesis credits may be counted toward this degree. All 30 ~~of the 33~~ credits must be at or above the 5000 level.

Master of Science with a Business Minor Option

A non-thesis option, this program leads to a master's degree along with a minor in Business Administration. It requires a total of 36 credits. At least 15 of the credits must be taken from the Ocean Engineering core course list (see core course requirements section). In addition, 6 credits relating to the student's area of focus in ocean engineering must be selected and 15 credits must be selected from the College of Business approved course list outlined under the [Business Minor](#) heading at the beginning of this College section.

The [Admissions](#) and [Degree Requirements](#) sections of this catalog contain statements of regulations that apply to all graduate students. Of particular interest is the information under the headings Graduate Admission Regulations and Graduate Degree Requirements. Statements referring to foreign language requirements do not apply to Ocean Engineering students; neither the Master of Science nor the Ph.D. degree requires foreign language proficiency.

Admission Requirements

Specific admission requirements for Ocean Engineering are more stringent than the general FAU graduate admissions requirements.

A candidate for the master's program in Ocean Engineering must satisfy the following entry requirements:

1. A baccalaureate or equivalent degree in Engineering, Science or Mathematics;
2. A 3.0 (on a 4.0 scale) GPA or better in the last 60 credits of undergraduate work;
3. Scores of at least 145 (verbal) and 150 (quantitative) on the Graduate Record Examination (GRE).
4. Must demonstrate 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 at least 550 (paper-based) or 213 (computer-based) or 79 (iBT);

5. All students will have a thesis or advisory committee during their studies. For thesis students, their advisor is the chair of the advisory committee. A thesis or advisory committee must be formed before a plan of study can be filed;
6. Students who enter the program without an assistantship will be assigned a mentor by the chair of the graduate committee. Students without an advisor are required to visit at least three faculty members during their first semester requesting to form an advisory committee. A report on the outcome of the faculty visits must be filed with the campus graduate coordinator.
7. Adherence to the policies and regulations and the graduate admission requirements of the University as outlined in this University catalog;
8. Conditional admission may be permitted if the above requirements are not met.

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Degree Requirements

The degree of Master of Science with major in Ocean Engineering will be awarded to candidates who have:

1. Complied with University graduate policies and regulations;
2. Satisfied the University's graduate degree requirements;
3. Satisfactorily completed the appropriate courses of study.

And for the thesis option:

4. Submitted and defended a thesis based on the student's original work in an area of focus.

And for the non-thesis or minor in business options:

4. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from courses in their program of study. The portfolio will be reviewed by the student's supervisory committee.

Program Options and Core Course Requirements

Four program options are available to graduate students in Ocean Engineering with either the thesis or non-thesis option. These are shown in a subsequent section.

All graduate students, regardless of option or specialty, must complete the following core courses or must take a satisfactory substitute course of similar content from another university or offer an appropriate substitute consistent with the student's specialty for approval by the supervisory committee by departmental petition.

Mathematical Methods in Ocean Engineering 1*	EOC 5172
Engineering Data Analysis	EOC 6635
Physical Aspects of Oceanography	OCP 6050
<i>In addition, two of the following five courses must be taken:</i>	
Advanced Strength of Materials**	EGM 6533
Special Topics	EOC 6934
Advanced Hydrodynamics 1	EOC 6185
Corrosion 1	EOC 6216C
Engineering Principles of Acoustics	EOC 6317C

* Students with an advanced mathematics competency may obtain exemption upon entrance to the program for Mathematical Methods in Ocean Engineering 1 (EOC 5172) and/or Mathematical Methods in Ocean Engineering 2 (EOC 6174). These students must demonstrate to their advisor, using course descriptions, that the equivalent of five to six courses beyond calculus, including areas such as differential equations, advanced calculus, matrix theory, complex analysis and probability and statistics have been taken. Approval by the graduate programs committee is also required.

** May be substituted with EOC 6934, Special Topics (Theory of Elasticity)

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 earned at another recognized institution prior to admission to the Ocean Engineering graduate program may be transferred to a student's degree program subject to the following restrictions:

1. The student must present a transcript identifying the course, in which the student has 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. An exception exists in the B.S.O.E. to M.S. program where up to 9 credits (5000 level or higher) may be counted for both degrees.
3. The student's advisor and the Ocean and Mechanical Engineering graduate program coordinator, who may seek the advice of other faculty if needed, will decide whether to accept or reject the course credit.

Recency of Credits

No credit earned ten or more years before the degree is awarded may be counted toward a graduate degree.

Course Load

All students choosing the thesis option and receiving financial assistance must be full-time students. This requires that they are registered for 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. A maximum of 12 credits may be taken in a semester. In the graduation semester, the student may be allowed to take 1 credit.



Supervisory Committee

All graduate students will be assigned an academic advisor who will assist the student in planning a course schedule for the program and will also approve all course selections, schedules and schedule changes.

By the end of the first semester or at the completion of 9 credits, the student, in consultation with the academic advisor, should make the following selections:

1. A particular program option. If selecting a thesis program, then:
 - a. Chair of the supervisory committee.
 - b. At least two other members for the supervisory committee.

The chair of the supervisory committee, who is normally the student's advisor, and at least two of the other members must be chosen from the Ocean and Mechanical Engineering faculty. Members from outside the department may be chosen for the supervisory committee with the permission of the department chair. The student should obtain the consent of other members to serve on the supervisory committee. Having obtained this permission, the names of the committee members should be submitted to the department chair. The committee acts as a unit to guide the student's degree program.

Plan of Study

Students choosing the thesis option as part of the M.S. program should, as soon as practical after the selection of a supervisory committee, submit a formal Plan of Study to the committee. The plan must be listed on the form titled "Plan of Study for the Master's Degree (Form 6)" and will include all course and thesis work that the student expects to complete for the M.S. degree. The form must be submitted no later than the end of the second semester. Upon approval of the plan, the student will be admitted to candidacy for the M.S. Degree. The student is required to defend his/her thesis proposal before the end of the third semester.

For students electing the non-thesis option, the "Plan of Study for the Master's Degree (Form 6)" must still be completed and approved by the advisor, who will submit the plan to the Graduate College. For both the thesis and non-thesis options, it is required that the admission to candidacy form be completed and submitted at least one semester prior to the semester in which the student expects to graduate.

Fast Track Program

The Department of Ocean and Mechanical Engineering offers an accelerated program option for the Master of Science with major in Ocean Engineering (with thesis) for qualified students who will be supported under research assistantships. The accelerated program allows a student to complete an M.S. degree in 12 months.

The objective of this option is to provide an opportunity for the student to earn a master's degree in one year, which translates into significant reductions in both time and expense, thus allowing the student to enter the workforce sooner, minimizing the financial impact of pursuing an M.S. degree. In order to achieve this goal, the program of study and thesis work must be well defined prior to the student starting the program of study. In addition to the normal requirements, students with an engineering core GPA of 3.5 or better, in conjunction with their prospective graduate studies academic advisor, are invited to submit a letter of intent to the graduate committee for consideration to be admitted into this program. The letter of intent should include an outline of the project and milestones to be reached by the end of each semester. Students admitted into the accelerated option are allowed to take a maximum of 12 credits per semester.

Thesis Work and Progress Reviews

For those students who elect the thesis option, the first step, to be completed by the end of the third semester of full-time enrollment, is the submission of a written thesis proposal to the supervisory committee. This proposal must be approved by the supervisory committee before the student begins extensive work in the selected research area. In the proposal defense, the student presents and defends, as required, the planned research. Each semester after the proposal defense the committee will review the student's progress.

If at any time the progress in the student's research is found to be unsatisfactory, the supervisory committee will report to the department chair, inform the student in writing as to the nature of the difficulties and record the committee's opinion in the student's file. The student will then be given ample opportunity to improve performance and defend the student's position at a further review meeting held at the end of the semester. If no improvement has been demonstrated, the student's future program, including the continuation of stipend and tuition waiver, will be re-evaluated.

A minimum of two weeks prior to the anticipated thesis defense, the written thesis must be delivered to the department in the format described in the Graduate Thesis and Dissertation Guidelines. The guidelines may be obtained from the Graduate College or from the Ocean Engineering program. An announcement stating the thesis topic and time and location of the defense will be provided to all department faculty and to the supervisory committee members one week prior to the scheduled defense. The announcement will also be posted in the department and/or mailed to all Ocean and Mechanical Engineering faculty, staff and students.

Unsatisfactory Performance

A graduate student whose academic performance is deemed unsatisfactory will be denied further registration in the department programs. 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 semester in the program (this would normally be 15 to 18 credits) or after any subsequent semester. Please note that this is more strict than the University requirement. A student who exhibits unsatisfactory performance in the Ocean Engineering graduate program is not precluded from applying to another program in the University. No graduate credit may be earned for courses completed with a "C-," "D+," "D," "D-," "F" or "U" (refer to the [Academic Policies and Regulations section](#) of this catalog), even if grades in other courses bring the average up to a satisfactory level. A student who withdraws from a course after the Drop/Add period may be required to repay any tuition benefits received.

Master of Science Course Options

The following are suggested course sequences for the four Master of Science (M.S.) thesis options. When suggested course(s) are not offered, equivalent course(s) as determined by the student's advisor may be taken. Although some of these program options recommend more than eight courses, students are required to take only eight courses (24 credits) to meet the minimum requirements.

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M.S. with Major in Ocean Engineering Marine Materials and Offshore Structures Option

First Year, Fall	
Advanced Strength of Materials	EGM 6533
Corrosion 1	EOC 6216C
Engineering Data Analysis	EOC 6635

First Year, Spring	
Introduction to Finite Element Methods	EGM 5351
or Advanced Fracture and Failure Processes 1	EOC 6157
Mathematical Methods in Ocean Engineering 1	EOC 5172
Elective	

First Year, Summer	
Fracture Mechanics	EML 6239
or Master's Thesis	OCE 6971
Physical Aspects of Oceanography	OCP 6050

Second Year, Fall	
Mechanics of Composite Materials	EGM 6562
or Special Topics (Theory of Elasticity)	EOC 6934
Master's Thesis	OCE 6971

Elective

Additional Courses	
Mechanical Properties of Polymers (spring semester)	EML 6235
Special Topics, Flow Control (fall semester)	EOC 5934
Advanced Hydrodynamics 1 (fall semester)	EOC 6185
Corrosion 2	EOC 6218C
Offshore Structures (spring semester)	EOC 6431
Special Topics, Nanostructured Materials	EOC 6934

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**M.S. with Major in Ocean Engineering
Ship Design and Underwater Vehicles Option**

First Year, Fall	
Advanced Hydrodynamics 1	EOC 6185
Engineering Data Analysis	EOC 6635
Special Topics (Ship Structural Design)	EOC 6934

First Year, Spring	
Mathematical Methods of Ocean Engineering 1	EOC 5172
Hydrodynamic Aspects of Ship Design	EOC 6515
Intelligent Underwater Vehicles 1	EOC 6663

First Year, Summer	
Physical Aspects of Oceanography	OCP 6050
Special Topics	EOC 6934

Second Year, Fall	
Corrosion 1	EOC 6216C
Special Topics	EOC 6934
Thesis (6 credits)	OCE 6971

Additional Courses	
Introduction to Finite Element Method (spring semester)	EGM 5351
Advanced Computational Fluid Dynamics (spring semester)	EML 6726
Special Topics (May include Elements of High Speed Marine Vehicles Design)	EOC 6934

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**M.S. with Major in Ocean Engineering
Hydrodynamics and Physical Oceanography Option**

First Year, Fall

Advanced Hydrodynamics 1	EOC 6185
Engineering Principles of Acoustics	EOC 6317C
Engineering Data Analysis	EOC 6635

First Year, Spring	
Advanced Computational Fluid Dynamics	EML 6726
Mathematical Methods in Ocean Engineering 1	EOC 5172
Hydrodynamic Aspects of Ship Design	EOC 6515

First Year, Summer	
Special Topics	EOC 6934
Physical Aspects of Oceanography	OCP 6050

Second Year, Fall	
Mathematical Methods in Ocean Engineering 2	EOC 6174
Master's Thesis	OCE 6971

Additional Courses	
Turbulent Flow	EOC 6190
Advanced Ocean Wave Mechanics	EOC 6320
Special Topics (Ship Structural Design)	EOC 6934

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**M.S. with Major in Ocean Engineering
Acoustics Option**

First Year, Fall	
Advanced Hydrodynamics 1	EOC 6185
Engineering Principles of Acoustics	EOC 6317C
Engineering Data Analysis	EOC 6635

First Year, Spring	
Mathematical Methods in Ocean Engineering 1	EOC 5172
Ocean and Seabed Acoustics	EOC 6312
Advanced Signal Processing	EOC 6630

First Year, Summer	
Special Topics	EOC 6934
or Master's Thesis	OCE 6971
Physical Aspects of Oceanography	OCP 6050

Second Year, Fall	
Mathematical Methods in Ocean Engineering 2	EOC 6174
Master's Thesis	OCE 6971

Additional Courses	
Introduction to Finite Element Methods (spring semester)	EGM 5351
Mechanical Vibrations	EML 6223

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M.S. with Major in Ocean Engineering Business Minor Option

The following is a suggested course sequence for the Master of Science with major in Ocean Engineering, minor in Business. This is a non-thesis option only requiring a total of 36 credits.

First Year, Fall	
Financial Accounting Concepts	ACG 6027
Engineering Data Analysis	EOC 6635
Ocean Engineering Core	

First Year, Spring	
Mathematical Methods in Ocean Engineering 1	EOC 5172
Financial Management	FIN 6406
Global Environment of Management	MAN 6937
or Marketing Functions and Processes	MAR 6055

First Year, Summer	
Management of Information Systems and Technology	ISM 6026
Physical Aspects of Oceanography	OCP 6050

Second Year, Fall	
Ocean Engineering Core	
Ocean Engineering Core	

Second Year, Spring	
Ocean Engineering Elective	
Ocean Engineering Elective	

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Mechanical Engineering

Mechanical Engineering is the branch of engineering that is most directly and broadly concerned with mechanical systems and their use to control and transform energy for the benefit of humankind. Mechanical engineering embraces the science and art of the generation, transmission and utilization of thermal and mechanical energy and the design, production and application of devices and systems.

The Department of Ocean and Mechanical Engineering offers programs of study leading to the degrees of Bachelor of Science in Mechanical Engineering (B.S.M.E.), Master of Science (M.S.) with a major in Mechanical Engineering and Doctor of Philosophy (Ph.D.) with major in Mechanical Engineering.

To encourage undergraduates to pursue a graduate education, the department also offers combined B.S.M.E. to M.S. degree programs that permit a student to complete both a bachelor's and a master's degree within five years.

Mission Statement

The mission of the Mechanical Engineering program is to provide undergraduate students with the fundamental background necessary for a career in mechanical engineering and for the continuation of their education through postgraduate studies. For graduate students, the department strives to provide the in-depth background necessary for advanced work in mechanical engineering and to continue their education at the doctoral level. All students are prepared to conduct basic and applied research and to provide service to the engineering profession and the community.

Educational Objectives

The faculty has established three educational objectives for graduates as they progress through their careers:

A. *Career Contribution and Advancement*: Through their ability to solve engineering problems, meaningful design and hands-on experiences, critical thinking skills, and training in teamwork and communication, graduates will make significant contributions to their chosen field and advance professionally in mechanical engineering or allied disciplines.

B. *Professionalism*: Graduates will act with both professional and social responsibility in their career field, including a commitment to protect both occupational and public health and safety, and apply ethical standards related to the practice of engineering.

C. *Life-Long Learning*: Graduates will understand that their undergraduate education was just the beginning of their training and will continue to develop their knowledge and skills through progress toward or completion of graduate education, and/or professional development through short courses or seminars, and/or professional certification and/or participation in professional societies.

Educational Outcomes for Student Performance

The program will meet the above objectives by establishing the following educational outcomes for student performance.

At the time of graduation, the students will attain the following:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics;
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors;
3. An ability to communicate effectively with a range of audiences;
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts;
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives;
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions;
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Upon graduation, graduate students will be able to:

- a. Demonstrate an ability to perform research and/or perform advanced engineering analysis in their area of specialty;
- b. Formulate and analyze engineering problems and synthesize and develop appropriate solutions based on fundamental and advanced principles;
- c. Design mechanical systems to meet desired specifications using advanced engineering tools and techniques.

Upon graduation, doctoral students will be able to:

- a. Perform original research in their area of specialty;
- b. Demonstrate an advanced level of knowledge in mathematics and engineering fundamentals relevant to their discipline;
- c. Effectively communicate an advanced technical concept to their peers.

[Link to Combined Programs](#)

[Link to Master's Programs](#)

[Link to Doctoral Program](#)

COMBINED PROGRAMS

B.S.M.E. to M.S. Degree Program (Thesis Option)

Candidates seeking a combined program leading to both Bachelor of Science in Mechanical Engineering and Master of Science degrees with the thesis option must complete an approved program of at least 30 credits. Out of those 30, 9 credits of graduate coursework (5000 level or higher) will count toward both the bachelor's and master's degrees, as long as the following criteria are met:

1. The student has met the minimum 120 credits for the bachelor's degree; and
2. The student has taken a minimum of 30 credits in 5000 level or higher courses for the master's program.

A maximum of 9 credits may then be counted for both the bachelor's and master's programs if the total number of credits exceeds 150.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the [Transition Guides](#).

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Degree Requirements

Candidates must complete the following:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;
2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. Four technical electives (12 credits at the 5000 level or higher);
4. Up to three courses may be taken while the student is an undergraduate;
5. Before the end of the student's third semester of full-time enrollment, a written thesis proposal must be submitted to the supervisory committee and defended in an oral examination;
6. A master's thesis (6 credits), which must be defended at an oral examination;
7. At least one-half of the credits must be at the 6000 level or above;
8. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

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B.S.M.E. to M.S. Degree Program (Non-Thesis Option)

Candidates seeking a combined program leading to both Bachelor of Science in Mechanical Engineering and Master of Science degrees with the non-thesis option must complete an approved program of at least ~~33~~30 credits. Out of those ~~33~~30, 9 credits of coursework (5000 level or higher) will count toward both the bachelor's and master's degrees.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the [Transition Guides](#).

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Degree Requirements

Candidates must complete the following:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;

2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. ~~Six~~**Seven** technical electives (~~24-18~~ credits);
4. Up to three courses, ~~one at the 4000 level and two~~ at the 5000 level or higher, may be taken while the student is an undergraduate;
5. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from ~~44-10~~ courses in their program of study. The portfolio will be reviewed by the student's supervisory committee;
6. At least one-half of the credits must be at the 6000 level or above;
7. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

B.S.M.E. to M.S. Degree Program (Non-Thesis Option/Business Minor)

Candidates seeking a combined program leading to both Bachelor of Science in Mechanical Engineering and Master of Science degrees with the non-thesis option and with a minor in Business must complete an approved program of at least 36 credits. Out of those 36, 9 credits of coursework (5000 level or higher) will count toward both the bachelor's and master's degrees.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the [Transition Guides](#).

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Degree Requirements

Candidates must complete the following:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6930, Special Topics (Fluid Dynamics);
2. A math course (3 credits), Mathematical Methods in Ocean Engineering 1;
3. Three technical electives (9 credits) at the 5000 or 6000 level from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section;
4. Up to three courses at the 5000 level or higher, may be taken while the student is an undergraduate;
5. [Five business courses](#) (15 credits) as described at the beginning of this College of Engineering and Computer Science section;
6. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from 12 courses in their program of study. The portfolio will be reviewed by the student's supervisory committee;
7. At least one-half of the credits must be at the 6000 level or above;
8. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

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MASTER'S PROGRAMS

The Master of Science program has both thesis and non-thesis options. The thesis option requires a minimum of 24 credits of coursework and a thesis (6 additional credits). The non-thesis option requires a minimum of 33 credits of coursework. Requirements for the Ph.D. program are described later in this section.

Each student must complete a comprehensive and coordinated Plan of Study requiring depth in one or more of the following areas: mechanical systems, solid body mechanics, fluid mechanics, heat transfer, thermal/fluid systems, helicopter dynamics, materials, manufacturing, controls, robotics and CAD/CAM.

Admission Requirements

Usual admission requirements are as follows. Students with non-engineering bachelor's degrees, click [here](#) for additional requirements.

1. A baccalaureate degree in Engineering, Natural Science or Mathematics, but preferably in Mechanical Engineering and from a regionally accredited institution. A student who does not have a background in mechanical engineering should expect to take additional undergraduate mechanical engineering coursework.
2. Demonstrated proficiency in both written and spoken English. A student from a non-English-speaking country is required to take the Test of English as a Foreign Language (TOEFL) exam and achieve a score of at least 550 (CBT-213, iBT-79).
3. At least a 3.0 (of a 4.0 maximum) GPA in the last 60 credits attempted prior to graduation.
4. A score of 145 or higher on the verbal and 150 or higher on the quantitative portions of the Graduate Record Examination (GRE) or a combined score of 1000 or higher on the verbal and quantitative portions of the GRE taken prior to fall 2011. GRE scores more than five years old will not be accepted.
5. Petitions for admittance to the program will not be accepted when a student wishes to include more than five courses taken as a non-degree-seeking student.

Admission to Candidacy

A student is eligible to apply for candidacy when:

1. The student has completed a minimum of 9 credits as a graduate student.
2. The student has maintained a minimum GPA of 3.0 in all courses attempted as a graduate student.
3. The student has filed an approved Plan of Study for the degree program.

Students should file for candidacy as soon as they are eligible. Usually, no more than 20 credits of completed work before admission to candidacy will be accepted toward a degree program. A student should be admitted to candidacy prior to beginning work on thesis.

Degree Requirements

Students must satisfy all of the University graduate requirements.

[Link to Master of Science with Major in Mechanical Engineering](#)

[Non-thesis Option and Non-thesis Option with a Business Minor](#)

[Link to Master of Science with Major in Mechanical Engineering and Engineering Management Minor](#)

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Master of Science with Major in Mechanical Engineering (Thesis Option)

Candidates for the Master of Science degree with the thesis option must complete an approved program of at least 30 credits including:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;
2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. Four technical electives (12 credits) at the 5000 level or higher;
4. Before the end of the student's third semester of full-time enrollment, a written thesis proposal must be submitted to the supervisory committee and defended in an oral examination;
5. A Master's thesis (6 credits), which must be defended at an oral examination;
6. At least one-half of the credits must be at the 6000 level or above;
7. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

**Master of Science with Major in Mechanical Engineering
Non-Thesis Option and Non-Thesis Option with a Business Minor**

Candidates for the Master of Science degree with the non-thesis option must complete an approved program of at least ~~33~~30 credits including:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;
2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. ~~Seven~~Six technical electives (~~24~~18 credits) at the 5000 or 6000 level;
4. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from 104 courses in their program of study. The portfolio will be reviewed by the student's supervisory committee;
5. At least one-half of the credits must be at the 6000 level or above;
6. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

Candidates for the Master of Science degree with the non-thesis option and a Business minor must complete an approved program of at least 36 credits including:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;
2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. Three technical elective courses (9 credits) at the 5000 or 6000 level from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section;
4. [Five business courses](#) (15 credits) as described at the beginning of this College of Engineering and Computer Science section under the Business Minor heading;
5. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from 12 courses in their program of study. The portfolio will be reviewed by the student's supervisory committee;
6. At least one-half of the credits must be at the 6000 level or above;
7. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

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Master of Science with Major in Mechanical Engineering and Engineering Management Minor

This Master of Science degree program with a minor in Engineering Management is a 36-credit program consisting of advanced courses in mechanical engineering as well as courses in the College of Business. Candidates for this program should have an undergraduate degree in mechanical engineering with a minimum GPA of 3.0 and a score of 145 or higher on the verbal and 150 or higher on the quantitative portions of the Graduate Record Examination (GRE), or a combined score of 1000 or higher on the verbal and quantitative portions of the GRE taken prior to fall 2011. GRE scores more than five years old will not be accepted. Non-English-speaking candidates must have a minimum score of 550 on the TOFEL. Two reference letters and at least two years of professional experience are also required.

Candidates for the Master of Science degree with Major in Mechanical Engineering and Engineering Management minor must complete an approved program of at least 36 credits including:

1. Three core courses (9 credits): EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;
2. A math course (3 credits): EOC 5172, Mathematical Methods in Ocean Engineering 1;
3. Three elective courses (9 credits) from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section;
4. Three required management courses (9 credits) listed in the table below;
5. Two management elective courses (6 credits) from the table below;
6. At the time of application for degree, students must submit a portfolio to their advisor consisting of four graduate projects from 12

courses in their program of study. The portfolio will be reviewed by the student's supervisory committee;

7. At least one-half of the credits must be at the 6000 level or above;

8. At least one-half of the credits must be from the list of Mechanical Engineering courses shown in the Engineering and Computer Science Course Descriptions section.

Required Management Courses (9 credits)		
Organizational Behavior	MAN 6245	3
Operations Management	MAN 6501	3
Project Management	MAN 6526	3

Management Elective Courses (6 credits)		
<i>Select two courses from the list:</i>		
Entrepreneurship, Creativity and Innovation	MAN 6299	3
Project Management	MAN 6526	3
Cross-Cultural Management and Human Resources	MAN 6609	3
International Business Operations	MAN 6614	3
Entrepreneurial Consulting Project	MAN 6806	1-4
Seminar in Entrepreneurship/Venture Management	MAN 6875	3
Global Environment of Management	MAN 6937	3

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