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Graduate Programs—PROGRAM CHANGE REQUEST

DEPARTMENT: OCEAN AND MECHANICAL ENGINEERING

COLLEGE: ENGINEERING AND COMPUTER SCIENCE

PROGRAM NAME:
MS IN MECHANICAL ENGINEERING

EFFECTIVE DATE
 (PROVIDE TERM/YEAR)

FALL 2015

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

THIS PROPOSAL IS FOR CHANGES TO THE PROGRAM REQUIREMENTS FOR THE COMBINED BS/MS DEGREE PROGRAM IN MECHANICAL ENGINEERING ALLOWING A FAU OCEAN ENGINEERING UNDERGRADUATE STUDENT WHO QUALIFIES FOR THE BS/MS IN OCEAN ENGINEERING TO PURSUE A BS/MS IN MECHANICAL ENGINEERING. A STUDENT WILL QUALIFY FOR THIS PROGRAM AS LONG AS HE/SHE HAS TAKEN TWO (2) OF THE DEPARTMENTAL APPROVED 4-CREDIT SENIOR LEVEL OE ELECTIVE COURSES AND THE ONE-CREDIT SENIOR SEMINAR (EOC 4905) WHICH WILL COUNT AS 9 CREDITS TOWARDS THE MS DEGREE IN MECHANICAL ENGINEERING.

THE NEW PROGRAM IS EXPECTED TO INCREASE GRADUATE STUDENT ENROLLMENT IN THE MECHANICAL ENGINEERING MASTER'S PROGRAM.

THE PROPOSALS HAVE BEEN APPROVED BY THE DEPARTMENT GRADUATE COMMITTEE.

Faculty contact, email and complete phone number:
 Tsung-Chow Su, Eng.Sc.D.
 561-297-3896

Consult and list departments that might be affected by the change and attach comments.
None- The change only affects this Department based on classes offered.

Approved by:

Department Chair: Jawad Alier

College Curriculum Chair: _____

College Dean: _____

UGPC Chair: _____

Graduate College Dean: _____

UFS President: _____

Provost: _____

Date:

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.

GRADUATE COLLEG

JUL 07 2015

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 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 *Transfer Student Manual*.

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.M.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.M.E. degree program will be presented with a certificate of recognition.

A FAU Ocean Engineering undergraduate student who qualifies for the combined BS-MS in Ocean Engineering will also qualify to pursue the combined BS-MS in Mechanical Engineering. Any two of the following 4-credit elective ocean engineering courses, plus one credit for Senior Seminar (EOC 4905), will count as 9 credits towards the master's degree in Mechanical Engineering:

- EOC 4307C: Acoustics II
- EOC 4124: Fluid Mechanics II
- EOC 4412: Structural Analysis II
- EOC 4201C: Engineering Materials II

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): either MAP 4306, Engineering Mathematics 2, or EOC 5172, Mathematical Methods in Ocean Engineering 1;

3. Four technical electives (12 credits). Two courses may be at the 4000 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 credits. Out of those 33, 9 credits will count toward both the bachelor's and master's degrees.

A FAU Ocean Engineering undergraduate student who qualifies for the combined BS-MS in Ocean Engineering (non-thesis option) will also qualify to pursue the combined BS-MS in Mechanical Engineering (non-thesis option). Any two of the following 4-credit elective ocean engineering courses, plus one credit for Senior Seminar (EOC 4905), will count as 9 credits towards the master's degree in Mechanical Engineering:

- EOC 4307C: Acoustics II
- EOC 4124: Fluid Mechanics II
- EOC 4412: Structural Analysis II
- EOC 4201C: Engineering Materials II

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 *Transfer Student Manual*.

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): either MAP 4306, Engineering Mathematics 2, or EOC 5172, Mathematical Methods in

Ocean Engineering 1;

3. Seven technical electives (21 credits). Two courses may be at the 4000 level;
4. Up to three courses 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 11 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 will count toward both the bachelor's and master's degrees.

A FAU Ocean Engineering undergraduate student who qualifies for the combined BS-MS in Ocean Engineering (Non-Thesis option/Business Minor) will also qualify to pursue the combined BS-MS in Mechanical Engineering (non-thesis option/Business Minor). Any two of the following 4-credit elective ocean engineering courses, plus one credit for Senior Seminar (EOC 4905), will count as 9 credits towards the master's degree in Mechanical Engineering (Non-Thesis Option/Business Minor):

- EOC 4307C: Acoustics II
- EOC 4124: Fluid Mechanics II
- EOC 4412: Structural Analysis II
- EOC 4201C: Engineering Materials II

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 *Transfer Student Manual*.

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): either MAP 4306, Engineering Mathematics 2, or EOC 5172, 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 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.