

ABET Related Forms (Fall 2020)



COLLEGE OF ENGINEERING & COMPUTER SCIENCE
Department of Ocean and Mechanical Engineering
777 Glades Road, ENG 217
Boca Raton, FL 33431
Tel: 561.297.3463, fax: 561.297.0493
www.ome.fau.edu
ome@fau.edu

RE: Alumni Assessment of Ocean Engineering Program Objectives and Outcomes

Dear Sir / Madam:

Our undergraduate Ocean Engineering program in the Department of Ocean & Mechanical Engineering at Florida Atlantic University is undergoing a periodic review to determine how well we are meeting our established program objectives and achieving expected student outcomes. As part of this evaluation, we are once again seeking input from our alumni associated with the program and we would be grateful if you could assist us in this process. As someone who have graduated from our program, you have perhaps the best vantage point to our BSOE program and hence to provide us with valuable information for program improvement.

Attached, you will find three forms: (1) Alumni Assessment of Program Objectives; (2) Alumni Assessment of Student Outcomes, and (3) Alumni Information Update. The information that you will provide on these forms will be carefully studied by the faculty and staff of the department and meaningful steps will be taken for program improvement. Naturally, program improvement based on the feedback from our alumni is important for the program recognition and accreditation by ABET (Accreditation Board for Engineering and Technology).

Please complete the attached employer surveys on program objectives and outcomes at your earliest convenience and return them to

Dr. Edgar An,
Boca Raton Campus
Department of Ocean & Mechanical Engineering
Florida Atlantic University
777 Glades Road, Boca Raton, FL 33431

or email them to pan@fau.edu. Please contact Dr. An, who chairs our undergraduate program assessment and improvement committee, by email (pan@fau.edu) if you have questions or need clarifications on the survey and/or on the program objectives and outcomes. Details of our program can be found at <http://www.ome.fau.edu/ocean-engineering/undergraduate>.

Sincerely,

Edgar An, Professor
Associate Chair, Ocean & Mechanical Engineering

Encls: Survey forms on FAU-BSOE program objectives and outcomes, and information update.

Boca Raton • Dania Beach • Davie • Fort Lauderdale • Jupiter • Treasure Coast

An Equal Opportunity/Equal Access Institution

1. Alumni Survey on the BSOE Program Objectives

Using a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent, please assess how well the BSOE program at FAU achieves its stated program objectives. If unable to rank any objective, you may leave that blank. Please return the completed form to pan@fau.edu. Thanks.

| BSOE Program Objectives | Assessment |
|--|--|
| Graduates of the ocean engineering baccalaureate program at the Florida Atlantic University, within a few years after graduation, will: | 17.....10 Poor Satisfactory Excellent |
| 1. Demonstrate an ability to carry out engineering tasks in the multi-disciplinary field of ocean engineering. | |
| 2. Make meaningful contributions in terms of design, development and integration of engineering systems, particularly for applications in the ocean environment. | |
| 3. Pursue further study for the graduate degree and / or participate in professional societies. | |
| 4. Develop and exhibit leadership qualities in their engineering work. | |
| 5. Understand various complexities and issues of the contemporary society and make professional contributions in the larger and long-term interest of the society. | |

Other comments/suggestions (if any) on the program objectives (use additional pages if needed):

2. Alumni Survey on the BSOE Program Student Outcomes

Using a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent, please assess how well the BSOE program at FAU achieves the student outcomes through its curriculum. If unable to rank any of the outcome(s), you leave that blank. Please return the completed form to pan@fau.edu. Thanks.

| BSOE Program Student Outcomes | Assessment |
|--|---|
| The student outcomes of the BSOE program at FAU are the following: | 1.....7.....10 Poor Satisfactory Excellent |
| (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 | |

Update of Alumni Information

(Please return the completed forms to Dr. P. Edgar An at email pan@fau.edu)

Name _____

Year of Graduation with BSOE at FAU _____

Information on Subsequent Graduate Study and Degree (if applicable)

Name of the Degree Program and University: _____

Year of Graduation and Degree: _____

Work Experiences

| Name of the Company/Firm | Job Title and Job Description | Years of Employment From - To |
|--------------------------|----------------------------------|----------------------------------|
| | | |
| | | |
| | | |

Awards, Distinctions and Special Mentions Received After Graduating from FAU with BSOE:

Present Mailing and Email Address for Contact: _____

Present Affiliation and Address: _____

Any Additional Information or Comments on the BSOE Program at FAU:



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EMPLOYER SURVEY ON BSOE PROGRAM OBJECTIVES AND OUTCOMES

Dear Sir/Madam:

Our undergraduate Ocean Engineering program in the Department of Ocean & Mechanical Engineering at Florida Atlantic University is undergoing a periodic review to determine how well we are meeting our established program objectives and achieving expected student outcomes. As part of this evaluation, we are once again seeking input from industry, alumni and others associated with the program and we would be grateful if you could assist us in this process. As an employer (or a supervisor) of our OE graduates, your assessment of the program based on your knowledge of our graduates and their performance in your company is highly valued and is used for continuous improvement of the program. Please complete the attached employer surveys on program objectives and outcomes at your earliest convenience and return them to

Dr. Edgar An,
Boca Raton Campus
Department of Ocean & Mechanical Engineering
Florida Atlantic University
777 Glades Road, Boca Raton, FL 33431

or email them to pan@fau.edu. Please contact Dr. An, who chairs our undergraduate program assessment and improvement committee, by email (pan@fau.edu) if you have questions or need clarifications on the survey and/or on the program objectives and outcomes. Details of our program can be found at <http://www.ome.fau.edu/ocean-engineering/undergraduate>.

If you find that our graduates are spread throughout various divisions of your firm, necessitating the assessment by individual division heads or supervisors, please have the division heads/ supervisors complete the survey form and return them to us at the above address.

We thank you for your valuable time and input and send our best regards to you and your colleagues.

Yours truly,

Edgar An, Professor
Associate Chair, Ocean & Mechanical Engineering
pan@fau.edu

Encls: Department Mission/Goal/Objectives/Outcomes Statements; Course List; 2 Survey Forms

**Department of Ocean & Mechanical Engineering
Florida Atlantic University**

Mission: The mission of the Ocean Engineering Program is to provide an outstanding ocean engineering program for learning and research and to prepare individuals to meet national and international engineering challenges in the ocean environment.

Undergraduate Program Goal: The goal of the Ocean Engineering Program is to develop and offer a comprehensive and broad curriculum in science and engineering that prepares a student, upon graduation, to efficiently perform engineering tasks in the ocean environment or to successfully pursue higher studies and research in engineering.

Undergraduate Program Objectives:

Graduates of the ocean engineering baccalaureate program at the Florida Atlantic University, within a few years after graduation, will:

1. Demonstrate an ability to carry out engineering tasks in the multi-disciplinary field of ocean engineering.
2. Make meaningful contributions in terms of design, development and integration of engineering systems, particularly for applications in the ocean environment.
3. Pursue further study for the graduate degree and / or participate in professional societies.
4. Develop and exhibit leadership qualities in their engineering work.
5. Understand various complexities and issues of the contemporary society and make professional contributions in the larger and long-term interest of the society.

Expected Undergraduate Student Outcomes

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

**Department of Ocean & Mechanical Engineering
Florida Atlantic University
Bachelor of Science in Ocean Engineering (BSOE) List of Courses**

Letters, Arts, Humanities, Social Sciences

(24 credits) English I & II, Appreciation of Music, Theater etc, Economics, History, Geography, Introduction to Philosophy, History of Civilization, etc.

Mathematics: Calculus I, II, III
(15 credits) Engineering Mathematics 1

Sciences: Physics I, II with Lab
(15 credits) Chemistry I with Lab, Oceanography

Computers Introduction to C Programming
(6 credits) Computer Applications in Engineering 1

Electrical Circuits, Introduction to Electronics & Programming
(6 credits)

Basic Engineering Fundamentals of Engineering, Engineering Graphics
(6 credits)

Junior Year: Statics, Dynamics, OE Lab
(44 credits) Thermodynamics
OE Fluid Mechanics (w/ buoyancy & stability)
Strength of Materials
Engineering Materials I
Vibrations, Acoustics for Ocean Engineers
Structural Analysis
Ocean Thermal Systems
Fabrication of OE Systems
Dynamic Systems
Finite Element Analysis**
Innovative Sensing and Actuation Technology**
Computer Applications in ME 2

Senior Year: Marine Topics
(20 credits) Ocean Wave Mechanics
Ocean & Environmental Data Analysis
Ship Hydrodynamics*
Marine Materials and Corrosion*
Underwater Acoustics*
Ocean Structures*
Senior Design I & II

** Junior Electives (1 out of 2 Courses)

* Senior Electives (2 out of 4 Courses)

Total required credits for the degree = 136

1. Employer Survey on the BSOE Program Objectives

The following objective statements for the Ocean Engineering Undergraduate Program were developed by the faculty members of the Department and the College of Engineering and Computer Science. For each objective, please rate its appropriateness using a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent, and assess how well the BSOE program at FAU achieves its stated program objectives. If unable to rank any objective, you may leave that evaluation blank. You may include additional comments on a separate page. Thank you!

| BSOE Program Objectives | Assessment Scale |
|--|--|
| Graduates of the ocean engineering baccalaureate program at the Florida Atlantic University, within a few years after graduation, will: | 1 710 Poor Satisfactory Excellent |
| 1. Demonstrate an ability to carry out engineering tasks in the multi-disciplinary field of ocean engineering. | |
| 2. Make meaningful contributions in terms of design, development and integration of engineering systems, particularly for applications in the ocean environment. | |
| 3. Pursue graduate study and / or participate in professional societies. | |
| 4. Develop and exhibit leadership qualities in their engineering work. | |
| 5. Understand various complexities and issues of the contemporary society and make professional contributions in the larger and long-term interest of the society. | |

Other Comments on Objectives (use additional pages if needed):

Your Name: _____ **Date** _____

Affiliation and Address: _____

Current Email Address: _____

Please return the completed form, together with other survey forms, to Dr. Edgar An at his email pan@fau.edu

2. Employer Survey on the BSOE Program Student Outcomes

Based on the performance of the graduates of FAU’s Ocean Engineering Undergraduate Program employed in your company, please provide us with your assessment of how well we are achieving our intended undergraduate program outcomes as listed in the following table. Please use a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent). If unable to evaluate any of the outcome(s), you may leave that blank. Thank you.

We greatly value your assessment which will be used to continually monitor and improve the quality of our program. Thank you!

| BSOE Program Student Outcomes | Assessment Scale |
|--|--|
| The student outcomes of the BSOE program at FAU are the following: | 17.....10 Poor Satisfactory Excellent |
| (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 | |

Other Comments on Outcomes: (use additional pages if needed)

Your Name: _____ **Date** _____

Affiliation and Address: _____

Current Email Address: _____

Please return the completed form, together with other survey forms, to Dr. Edgar An at his email pan@fau.edu

**DEPARTMENT OF OCEAN & MECHANICAL ENGINEERING
FLORIDA ATLANTIC UNIVERSITY
PEER EVALUATION OF BSOE COURSE PORTFOLIO**

Semester:

Course Number and Title:

Instructor's Name:

Evaluator's Name:

EVALUATION FORM

1. Course material covered:

Satisfactory Good Excellent

Suggestions for addition/removal/change to course topics covered:

.....
.....
.....

2. Overall achievement of the course objective:

Satisfactory Good Excellent

Any suggestions for improving the achievement of stated objective:

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.....
.....

3. Learning outcomes of the course:

Satisfactory Good Excellent

Suggestions for addition/removal/change to stated learning outcomes:

.....
.....
.....
.....

4. Adequacy of Home Work Assignments:

Satisfactory Good Excellent

Any suggestions for improvement to the nature of home works assigned:

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.....
.....

5. Adequacy of Tests and Examination:

Satisfactory Good Excellent

Any suggestions for improvement of tests and examination questions:

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.....
.....
.....

6. Adequacy of Laboratory Experiments:

N/A Satisfactory Good Excellent

Any suggestions for improvement of laboratory experiments:

.....

Department of Ocean & Mechanical Engineering
Student Survey of Course Outcomes

Course Number and Title: EOC 4804 Ocean Engineering Systems Control & Design

Semester Taught: _____

Instructor: _____

Please use this form to rate your personal feelings of achievement of the published outcomes for the course as listed below. The following 0 to 5 rating scale should be used in assessing your achievement of the outcomes. This information will be presented for review to the Department ABET/SACS committee at the end of each semester. The committee will evaluate performance of the specified outcomes by the students and make recommendations for changes as appropriate.

5 - Complete understanding of the technical content of the outcome or the specified skills and a confidence in applying the techniques to engineering problems.

4 - Good understanding of the technical content of the outcome or the specified skills and an ability to apply the techniques to engineering problems.

3 - Adequate understanding of the technical content of the outcome or the specified skills and some ability to apply the techniques to engineering problems.

2 - Marginal understanding of the technical content of the outcome or the specified skills and some difficulty in applying the techniques to engineering problems.

1 - No understanding of the technical content of the outcome or the specified skills.

0 - Did not cover the information specified in the outcome in the class.

Outcome 1: An ability to design a system that satisfies an ocean engineering related need (c/2) _____

Outcome 2: An ability to function in multidisciplinary design teams (d/5) _____

Outcome 3: An ability to communicate effectively during the progress review meetings and Final Design Review (g/3) _____

Outcome 4: An understanding the potential economic, environmental, and societal impacts of ocean engineering designs (h/4) _____

Outcome 5: Recognition of the need for self-study and life-long learning in engineering design (i/7) _____

Outcome 6: An understanding of how contemporary issues affect engineering design (j/4) _____

Additional Comments:

EOC 4804 OE Systems Control and Design

Semester / Year: _____
Direct Course Assessment on Course Outcomes

| Outcome | Assignment | Course Assignment Assessment Ave (10pt max) |
|---------|------------|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

Course Outcomes: (letters in parentheses indicate correlation of the outcome with the appropriate program outcomes a-k/1-7)

1. An ability to design a system that satisfies an ocean engineering related need (c/2)
2. An ability to function in multidisciplinary design teams (d/5)
3. An ability to communicate effectively during the progress review meetings and Final Design Review (g/3)
4. An understanding the potential economic, environmental, and societal impacts of ocean engineering designs (h/4)
5. A recognition of the need for self-study and life-long learning in engineering design (i/7)
6. An understanding of how contemporary issues affect engineering design (j/4)

NOTE: If any of the outcomes above is less than 7 out of 10, please provide comments as to how improvements can be made and implemented in the future

Additional Comments

(To be completed by Industry and Navy/ONR attendees/representatives and OME/College faculty attending the presentation)

EVALUATION OF EOC 4804L OCEAN ENGINEERING SYSTEMS CONTROL & DESIGN

Instructor: _____

Year: _____

Project Title: _____

Evaluator's Name and Affiliation (Please Print): _____

Dear Evaluator: Based on the design accomplishments, team effort and project presentation, please rate the team's overall attainment of the following outcomes. **If any of the outcome(s) cannot be evaluated based on the available information, you may leave those unevaluated.** Any additional comments are welcomed. Please return the completed forms to Dr. An. Thanks!

| Course Outcomes | Evaluation | | |
|--|------------|--------------|-----------|
| | Poor | Satisfactory | Excellent |
| Outcome 1: An ability to design a system that satisfies an ocean engineering related need (outcome c/2) | | | |
| Outcome 2: An ability to function in multidisciplinary design teams (outcome d/5) | | | |
| Outcome 3: An ability to communicate effectively during the progress review meetings and Final Design Review (outcome g/3) | | | |
| Outcome 4: An understanding the potential economic, environmental, and societal impacts of ocean engineering designs (outcome h/4) | | | |
| Outcome 5: Recognition of the need for self-study and life-long learning in engineering design (outcome i/7) | | | |
| Outcome 6: An understanding of how contemporary issues affect engineering design (j/4) | | | |
| Outcome 7: application of engineering standards and constraints as part of the engineering design experience | | | |

Additional Comments: (Continue on the other side, if more space is needed.)



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Graduating Seniors Assessment of BSOE Program Objectives

Using a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent, please assess how well the BSOE program at FAU achieves its stated program objectives listed in the table below. If unable to evaluate any of the objective(s), you may leave that blank. Please return the completed form to Dr. An. Thanks.

| <p style="text-align: center;">BSOE Program Objectives</p> | <p style="text-align: center;">Assessment Scale</p> <p style="text-align: center;">17.....10 Poor Satisfactory Excellent</p> |
|--|--|
| Graduates of the ocean engineering baccalaureate program at the Florida Atlantic University, <u>within a few years after graduation</u> , will: | |
| 1. Demonstrate an ability to carry out engineering tasks in the multi-disciplinary field of ocean engineering. | |
| 2. Make meaningful contributions in terms of design, development and integration of engineering systems, particularly for applications in the ocean environment. | |
| 3. Pursue graduate study and / or participate in professional societies. | |
| 4. Develop and exhibit leadership qualities in their engineering work. | |
| 5. Understand various complexities and issues of the contemporary society and make professional contributions in the larger and long-term interest of the society. | |

Other comments/suggestions (if any) on the program objectives (use additional pages if needed)

Name:

Non-FAU email where you can be reached in the future:



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Graduating Seniors Assessment of BSOE Student Outcomes

Using a scale ranging from 1 to 10, with 1 meaning poor, 7 satisfactory and 10 excellent, please assess how well the BSOE program at FAU achieves the learning outcomes through its curriculum. If unable to evaluate any of the outcome(s), you may leave that blank. Please return the completed form to Dr. An. Thanks.

PS: You may also send any additional comments about the program on p.2 of this form.

| BSOE Program Student Outcomes | Assessment Scale |
|--|--|
| The student outcomes of the BSOE program at FAU are the following: | 17.....10 Poor Satisfactory Excellent |
| (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 | |
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| (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 | |

Name:

Non-FAU email where you can be reached in the future: