

Academic Assessment Plan

University of Florida

Academic Affairs

Academic Colleges

College of Engineering

Mechanical & Aerospace Engineering

Aerospace Engineering (PhD)

Ph.D. in Aerospace Engineering Mission

The Mechanical & Aerospace Engineering department defines four objectives as the cornerstones of its mission. The first objective is naturally education. As an outstanding department in a top tier university, the department has an obligation to provide exceptional educational experiences to its students at the BS, MS, and PhD levels. Along these lines we are charged with the preparation of students in the mechanical and aerospace engineering fields for future leadership in industry, academia, and government. Our second objective is to conduct state-of-the-art basic and collaborative research towards advancing science and technology in mechanical engineering and aerospace engineering. Research is the lifeblood of any influential university. Thirdly we provide service to professional societies, our local community, and the state of Florida. With partnerships come great results and we keep this in the forefront of our activities as we partner with industry to address the needs of professional societies. Finally we profess our support of the college of engineering and the university in the fulfillment of their missions.

Our vision for fulfilling our mission is composed of the following:

- Attract, develop, and retain the best faculty and staff. Employing top people in our faculty and staff positions allow us to provide the educational experiences expected of our department. Faculty are the foundation of a strong department.
- Recruit and educate the best undergraduate and graduate students. A department without students is an empty house. Students perform research which advances the department and it is the achievements of students which reflect on the department when our students find success in the world.
- Conduct internationally recognized and well-funded fundamental & applied research. By performing research which is well-funded we ensure that our efforts coincide with relevant interests in the engineering community.
- Maintain state-of-the-art teaching and research facilities. Investing in our facilities allows us to fulfill our educational and research goals.

The mission statement of the program supports the college of engineering mission. Both explicitly seek to provide world-class programs in engineering education, research and service to the citizens of Florida and the nation. The mission statement for the program addresses the needs of the engineering profession which is consistent with the qualities of graduates cited in the college mission statement, i.e. vision, values, leadership and professional expertise.

The mission statement of this unit supports the university's mission statement by directly addressing the areas of teaching, research and scholarship, and service. The mission of the program is critically important to the mission of the university as a land-grant, sea-grant

and space-grant research university.

Responsible Roles: Associate Professor (Carroll, Bruce)

Program: Aerospace Engineering (PhD)

Progress:

PG 1: Increase PhD recruitment of domestic students

Increase PhD recruitment of domestic students.

Evaluation Method

Data is collected from admissions information

Responsible Role: Associate Professor (Carroll, Bruce)

Progress:

PG 2: Increase URM representation in PhD student population

Increase diversity in PhD student population, notably Hispanic and African American students.

Evaluation Method

Review of matriculation data

Responsible Role: Associate Professor (Carroll, Bruce)

Progress:

SLO 1: Knowledge

Ability to identify, formulate, and solve engineering problems. Ability to critically read and integrate engineering research literature.

SLO Area (select one): Knowledge (Grad)

Responsible Role: Associate Professor (Carroll, Bruce)

Progress:

Assessment Method

The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense. Based on student performance the committee will assign a score based on the Likert scale: 1 (poor), 2 (fair), 3 (good), 4 (very good) and 5 (excellent). 100% of students in the class should exhibit 3 or above.

SLO 2: Skills

Ability to use applied mathematical and/or modern experimental techniques. Ability to use modern engineering tools for practice at an advanced level.

SLO Area (select one): Skills (Grad)

Responsible Role: Associate Professor (Carroll, Bruce)

Progress:

Assessment Method

The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense. Based on student performance the committee will

assign a score based on the Likert scale: 1 (poor), 2 (fair), 3(good), 4(very good) and 5 (excellent). 100% of students in the class should exhibit 3 or above.

SLO 3: Professional Behavior

Ability to communicate effectively.

SLO Area (select one): Professional Behavior (Grad)

Responsible Role: Associate Professor (Carroll, Bruce)

Progress:

Assessment Method

The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense. Based on student performance the committee will assign a score based on the Likert scale: 1 (poor), 2 (fair), 3(good), 4(very good) and 5 (excellent). 100% of students in the class should exhibit 3 or above.

Ph.D. in Aerospace Engineering Detail

Start: 7/1/2017

End: 6/30/2018

Progress:

Providing Department: Aerospace Engineering (PhD)

Responsible Roles: Associate Professor (Carroll, Bruce)

Research (Graduate and Professional AAPs only)

The MAE department expects our doctoral students to conduct state-of-the-art basic and collaborative research towards advancing science and technology in mechanical engineering and aerospace engineering. Coursework used toward the degree contributes to the academic knowledge, skills and professional behaviors needed for students to satisfy the research aspect of the degree program. The student's committee chairman has primary responsibility for mentoring the student and directing the research activities of the student. Formulating a dissertation or thesis proposal is an important requirement for the degree thru which the student learns to identify and plan a research program.

Accordingly, the MAE department utilizes the written dissertation proposal when evaluating the student learning outcomes. The final written dissertation and oral defense provide a second opportunity for assessment of the student learning outcomes.

Assessment Timeline (Graduate and Professional AAPs only)

Curriculum Map (UG AAPs only)

Assessment Cycle (All AAPs)

Analysis and Interpretation: May-August Program Modifications: Completed by September 30 Dissemination: Completed by October 31

SLOs	Year	17-18	18-19	19-20	20-21	21-22	22-23
Content Knowledge							
Ability to identify, formulate, and solve engineering problems. Ability to critically read and integrate engineering research literature		X	X	X	X	X	X
Skills							
Ability to use applied mathematical and/or modern experimental techniques. Ability to use modern engineering tools for practice at an advanced level		X	X	X	X	X	X
Professional Behavior							
Ability to communicate effectively		X	X	X	X	X	X

Methods and Procedures (UG and Certificate AAPs)

SLO Assessment Rubric (All AAPs)

Measurement Tools (Graduate and Professional AAPs Only)

SLO 1:

Knowledge

Ability to identify, formulate and solve engineering problems

Ability to critically read and integrate engineering research literature

Assessment Plan

The both the dissertation proposal and final dissertation defense are important requirements for the PhD degree. The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense.

Rubric

Based on student performance the committee will assign a score based on the Likert scale: 1 (poor), 2 (fair), 3(good), 4(very good) and 5 (excellent).

Program Metric

100% of students in the class should exhibit 3 or above

Example Result

During the 2011/2012 academic year five (5) students made dissertation proposals. All five (5) scored 5 (excellent).

SLO 2:

Skills

Ability to use applied mathematical and/or modern experimental techniques

Ability to use modern engineering tools for practice at an advance level

Assessment Plan

The both the dissertation proposal and final dissertation defense are important requirements for the PhD degree. The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense.

Rubric

Based on student performance the committee will assign a score based on the Likert scale: 1 (poor), 2 (fair), 3(good), 4(very good) and 5 (excellent).

Program Metric

100% of students in the class should exhibit 3 or above

SLO 3:

Professional experience

Ability to communicate effectively

Assessment Plan

The both the dissertation proposal and final dissertation defense are important requirements for the PhD degree. The outcome is assessed by the dissertation committee at the proposal stage and a second time at the final dissertation defense.

Rubric

Based on student performance the committee will assign a score based on the Likert scale: 1 (poor), 2 (fair), 3(good), 4(very good) and 5 (excellent).

Program Metric

100% of students in the class should exhibit 3 or above

Assessment Oversight (All AAPs)

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Academic Assessment Plan Entry Complete: