


AABInternational

 <p>MIDDLE TENNESSEE STATE UNIVERSITY</p>	<p>Middle Tennessee State University Murfreesboro, TN</p>
	<p>Department of Aerospace</p>
	<p>M.S., Aeronautical Science</p>
<p>October 2021</p>	<p>STUDENT ACHIEVEMENT DATA</p>

The Aerospace Department M.S. in Aeronautical Science program has developed a robust and comprehensive assessment plan based on the criteria of its specialized accrediting body, the Aviation Accreditation Board, International (AABI).

This assessment plan consists of the annual evaluation of goals in ten areas. These include: students; program mission and educational goals; student learning outcomes; curriculum; faculty and staff; facilities, equipment, and services; institutional support; aviation safety culture and program; and industry relations. The assessment plan further consists of annual assessment of 1) program specific outcomes and 2) graduate student outcomes in AABI a-l general education requirements.

The outcome and measures that are specifically related to student performance are provided below:

MS in Aeronautical Science Program Outcomes

Outcome 1: Students will demonstrate professional competency in both the Aerospace Department core graduate courses and in their specific area of specialization.

Measure 1: Student performance on questions 1-7, consisting of MS core graduate course knowledge, on the written comprehensive exam taken near the end of their final semester, with the goal of an average student score above 80%.

Measure 2: Student performance on the subject matter knowledge component of written comprehensive examination questions 8-10, consisting of their MS area of knowledge specialization (Aviation Management, Aviation Safety and Security Management, or Aviation Education), with a goal of an average student score above 80%.

Outcome 2: Students will demonstrate the ability to conduct original research in their area of graduate specialization.

Measure: Students will be evaluated on either:

a) a thesis, which is evaluated and approved by an Aerospace Department Thesis Committee, the Aerospace Department Graduate Studies Coordinator, the Aerospace Department Chair, and the College of Graduate Studies, Goal is 100% acceptance of submitted theses by the highest level of review required.

b) an applied research capstone project. This project will be evaluated using a traditional grading scale, and the goal is average student scores of 80% or better.

Outcome 3: Students will demonstrate the oral and written communications skills necessary for an aviation professional.

Measure 1: Performance on written communications skills component of written comprehensive examination questions 1-10, with a goal of an average student score above 80%.

Measure 2: Student demonstration of oral communication ability as exhibited during the thesis defense or capstone project presentation, as assessed by the student's thesis or capstone chair, with a goal of average student score above 80%.

General Graduate Student Learning Outcomes

AABI requires that graduates of MS programs have completed studies beyond the basic levels and are able to:

- a. apply mathematics, science, and applied sciences to aviation-related disciplines at the master's or doctoral level, including an adequate foundation in statistics;
- b. analyze and interpret data at the master's or doctoral level;
- c. work effectively on multi-disciplinary and diverse teams;
- d. make professional and ethical decisions;
- e. communicate effectively, using both written and oral communication skills;
- f. engage in and recognize the need for life-long learning;
- g. assess contemporary issues;
- h. use the techniques, skills, and modern technology necessary for professional practice;
- i. assess the national and international aviation environment;
- j. apply pertinent knowledge in identifying and solving problems;
- k. apply knowledge of business sustainability to aviation issues;
- l. apply advanced qualitative and quantitative problem-solving skills.

MS in Aeronautical Science students are assessed in their achievement of these outcomes via their performance on specified outcomes in graduate core courses AERO 6610 and AERO 6611, through their performance on the comprehensive exam administered in the last semester of their program, and through the accomplishment of a thesis or applied research capstone project.

The chart below indicates where learning outcomes that address the AABI general learning criteria are assessed.

M.S. in Aeronautical Science – Graduate Program Student Learning Outcomes

AABI Graduate Student Outcomes	Where in curriculum evaluated	Measurement
a. apply mathematics, science, and applied sciences to aviation-related disciplines at the master’s or doctoral level, including an adequate foundation in statistics	Evaluation of Question 7 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
b. analyze and interpret data at the master’s or doctoral	Student performance on assigned projects in AERO 6611	Students’ average scores on the four projects indicated, evaluated as indicated in the AERO 6611 course syllabus.
c. work effectively on multi-disciplinary and diverse teams	Student performance on team project to develop viable research proposals in AERO 6610	Students’ average scores on each of the forum discussions related to this assignment (Forums for semester weeks 2, 5, 8, and 10), as well as their grades on the feedback provided to their final research partner on the “Evaluation of Research Proposal” assignment will be measured each semester.
d. make professional and ethical decisions	Evaluation of Question 6 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
e. communicate effectively, using both written and oral communication skills	1) Evaluation of written communication on comprehensive exam 2) Oral communication ability demonstrated on thesis or capstone defense	1) Assessment of written communication skills (see Rubric for MS Comprehensive Exam in Appendix I). The evaluation of each response by the lead faculty member for the course from which the question was developed has a written communication skills grade component. These responses will be averaged to arrive at a score for written communication. 2) Assessment of oral communication skills will be made via use of a rubric by the student’s thesis or capstone chair, with evaluation of the quality of the presentation provided by the student for their thesis defense or capstone presentation.
f. engage in and recognize the need for life-long learning	Evaluation of Question 5 on	Assessment of subject matter knowledge component. The response is graded by the

	comprehensive exam	lead faculty member for the course from which the question was developed.
g. assess contemporary issues	Evaluation of Question 2 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
h. use the techniques, skills, and modern technology necessary for professional practice	Student techniques and skills demonstrated on thesis or capstone project and defense	Assessment of initial acceptance of submitted student theses/projects by the highest level of review required (College of Graduate Studies for theses, Aerospace Department Chair for applied research capstone projects)
i. assess the national and international aviation environment	Evaluation of Question 4 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
j. apply pertinent knowledge in identifying and solving problems	Evaluation of Question 7 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
k. apply knowledge of business sustainability to aviation issues	Evaluation of Question 3 on comprehensive exam	Assessment of subject matter knowledge component. The response is graded by the lead faculty member for the course from which the question was developed.
l. apply advanced qualitative and quantitative problem-solving skills	Student performance on assigned projects in 6611	Students' average scores on the four projects indicated, evaluated as indicated in the AERO 6611 course syllabus.

Graduation Rates

Graduation rate over any specified period time is of little value in terms of analysis, as many students in the MS in Aeronautical Science program are employed full time and are completing their degree part-time. Instead, examination of enrollment, retention, and graduation numbers over a period of time is a more valuable analytical tool. The performance of the MS degree program on these metrics are indicated below:

MS in Aeronautical Science Student Enrollment

	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
MS in Aeronautical Science Enrollment	34	33	34	32	39	33	31	32	28	49	35

MS in Aeronautical Science Program Graduates

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
MS in Aeronautical Science Graduates	5	12	8	11	7	5	10	11	9	15	14	14

MS in Aeronautical Science Retention/Graduation Rate

Fall 2017-Fall 2018		Fall 2018-Fall 2019		Fall 2019-Fall 2020		Fall 2020-Fall 2021	
Retained/Graduated	Percent	Retained/Graduated	Percent	Retained/Graduated	Percent	Retained/Graduated	Percent
28	93%	29	88%	27	96%	40	82%

Rates and Types of Employment of Graduates

There were 14 graduates of the MS in Aeronautical Science program in the 2020-21 academic year. The following are the “next steps” for these students:

- 13 (93%) began or continued employment at the companies and positions indicated below
- 1 (7%) began a doctoral program

Employers of 2020-21 Graduates

- Nashville International Airport
- MTSU Aerospace (2)
- Cleveland-Hopkins International Airport
- Republic Airlines (2)
- Federal Express (2)
- Southwest Airlines
- Endeavor Airlines
- Nashville Music Industry
- Detroit Metro Wayne County Airport operations