



# UNIVERSITY OF NEBRASKA AT OMAHA AVIATION INSTITUTE

## Undergraduate Assessment Report for 2022-2023

College: CPACS - College of Public Affairs & Community Service

Department: Public Administration

Program: BAV Aviation-Air Transport Administration

Degree Level: Undergraduate

Academic Year of Report: 2022-2023

Date Range of Reported Data: Fall 2017 Fall 2022

Person Preparing the Report: Scott Vlasek

## I. Student Learning Outcomes (SLOs)

### A. Outcome Table

Program Student Learning Outcomes	Bloom's Taxonomy
<b>SLO 1:</b> Apply mathematics, science, and applied sciences to aviation related disciplines	Application
<b>SLO 2:</b> Analyze and interpret data	Analysis
<b>SLO 3:</b> Work effectively on multidisciplinary and diverse teams	Application
<b>SLO 4:</b> Make professional and ethical decisions	Application
<b>SLO 5:</b> Communicate effectively, using both written and oral communication skills	Application
<b>SLO 6:</b> Engage in and recognize the need for life-long learning	Knowledge
<b>SLO 7:</b> Assess contemporary issues	Analysis
<b>SLO 8:</b> Use the techniques, skills, and modern technology necessary for professional practice	Application
<b>SLO 9:</b> Assess the national and international aviation environment	Analysis

<b>SLO 10:</b> Apply pertinent knowledge in identifying and solving problems	Application
<b>SLO 11:</b> Apply knowledge of business sustainability to aviation issues	Application

These SLOs are reviewed by an external accrediting body.

B. Comment

None

## II. Assessment Methods

A. Assessment Table

<b>SLO 1:</b> <i>Apply mathematics, science, and applied sciences to aviation related disciplines</i>	
<b>1. Title of Measure:</b> <i>Research Proposal and Capstone Research Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 2:</b> <i>Analyze and interpret data</i>	
<b>1. Title of Measure:</b> <i>Research Proposal and Capstone Research Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 3:</b> <i>Work effectively on multidisciplinary and diverse teams</i>	
<b>1. Title of Measure:</b> <i>Airport Design Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 4:</b> <i>Make professional and ethical decisions</i>	
<b>1. Title of Measure:</b> <i>Internship Report and IRB Certification</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 5:</b> <i>Communicate effectively, using both written and oral communication skills</i>	
<b>1. Title of Measure:</b> <i>Research Proposal and Capstone Research Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 6:</b> <i>Engage in and recognize the need for life-long learning</i>	
<b>1. Title of Measure:</b> <i>Exit Interview</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 7:</b> <i>Assess contemporary issues</i>	
<b>1. Title of Measure:</b> <i>Hot Topics Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 8:</b> <i>Use the techniques, skills, and modern technology necessary for professional practice</i>	
<b>1. Title of Measure:</b> <i>Internship report</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 9:</b> <i>Assess the national and international aviation environment</i>	
<b>1. Title of Measure:</b> <i>Field Exam</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 10:</b> <i>Apply pertinent knowledge in identifying and solving problems</i>	
<b>1. Title of Measure:</b> <i>Research Proposal and Capstone Research Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

<b>SLO 11:</b> <i>Apply knowledge of business sustainability to aviation issues</i>	
<b>1. Title of Measure:</b> <i>Research Proposal and Capstone Research Project</i>	
<b>2. Domain</b>	Product
<b>3. Frequency of Data Collection</b>	Once/year

B. Comment

None

### III. Data Collection and Analysis

#### A. SLO Status Table

SLO	Status
SLO 1: Apply mathematics, science, and applied sciences to aviation related disciplines	Met
SLO 2: Analyze and interpret data	Not Met
SLO 3: Work effectively on multidisciplinary and diverse teams	Not Met
SLO 4: Make professional and ethical decisions	Met
SLO 5: Communicate effectively, using both written and oral communication skills	Met
SLO 6: Engage in and recognize the need for life-long learning	Unknown
SLO 7: Assess contemporary issues	Met
SLO 8: Use the techniques, skills, and modern technology necessary for professional practice	Met
SLO 9: Assess the national and international aviation environment	Met
SLO 10: Apply pertinent knowledge in identifying and solving problems	Met
SLO 11: Apply knowledge of business sustainability to aviation issues	Met

#### B. Comment

None

## IV. Decisions and Actions

### A. Table

SLO 1	<p>Each student in AVN 3700 and AVN 4990 is required to demonstrate proficiency in the scientific research method, the valid and reliable measurement of variables, the collection of qualitative and/or quantitative data, and the interpretation of that data.</p>
SLO 2	<p>Each student in AVN 3700 and AVN 4990 is required to demonstrate proficiency in the scientific research method, the valid and reliable measurement of variables, the collection of qualitative and/or quantitative data, and the interpretation of that data.</p> <p>While our goal that 80% of students will either be proficient or exceptional in this area has been met each year (2018 – 2021), that conclusion comes with a significant caveat. Our assessment of the research proposals in AVN 3700 and research reports in AVN 4990 demonstrates that our students often lack the data skills and experience necessary to conduct the analysis best suited for their research questions. In other words, we have found that students are constrained by a lack of preparation in this area. As a result, proposals and projects must be scaled back or redefined to align better with the students’ limited empirical skills and experience. This allows us to meet, if not exceed, our goal of 80% proficiency each year, but this is an unsatisfactory outcome.</p> <p>In response to the deficiencies identified through out assessment process and conversations with industry, we identified the development of an aviation specific data analytics course as a priority. This course was initially piloted in Spring 2021 and was offered again in Fall 2021. We are in the process now to make the necessary formal catalog changes that would eliminate the incumbent statistics course and add AVN – Data Analytics for Aviation as the required course. Recognizing that one course will likely not produce the improvements we seek, we are working to introduce more data analysis in lower-level courses. More details about our efforts in this regard are spelled out in one of our Assessment Case Studies in Appendix I.</p>
SLO 3	<p>This is an area where we continue to find deficiencies. All ATA students are required to take AVN 3090 – Airport Planning and Administration, which focuses on a team design project. As a result of our assessment efforts and conversations with the instructor for AVN 3090, we have implemented several strategies to mitigate problems associated with the team project. For example, the instructor now includes some training about working in teams in the course, instead of just hoping students have learned to work collaboratively elsewhere. The instructor has also implemented new policies designed to resolve issues within the teams and improve communications between the teams and the instructor. Unfortunately, assessment of this outcome is not complete. Historically, AVN 3090 has been taught in-person each spring semester. The shift to remote learning midway through Spring 20 and offering the course in asynchronous on-line format in Spring 21 does not allow us to understand if the changes that were made have had the desired impact.</p>

<p><b>SLO 4</b></p>	<p>All students in AVN 4990 attend a lecture on ethics in research, they complete on-line training in ethical research, and complete IRB certification for social sciences via the CITI platform.</p> <p>Over 80% of student interns demonstrate professional and ethical behavior according to evaluations completed by internship providers.</p>
<p><b>SLO 5</b></p>	<p>We meet or exceed the 80% proficient or exceptional goal in each year of our assessment of the proposal documents and presentations in AVN 3700 and the capstone report documents and presentations in AVN 4990.</p> <p>Several important lessons have been learned from our assessment of the written work and oral presentations in these courses.</p> <p>Written communication remains a struggle for many of our students. We can get most of them to a level of proficiency but doing so requires more effort and resources than we would hope to have to expend for seniors in our program. We have revisited how AVN – 3060 – Writing in Aviation as well as some of our other courses where writing is a key component might be enhanced to improve student performance in this fundamental skill. We continue to monitor progress in this area as we explore course and curricular revisions.</p> <p>Oral communication is less of a concern than written communication. Students seem to do much better in informal oral communications, such as class discussions, but continue to struggle with more formal presentations. As a result of our assessment efforts, we have implemented a ladder approach to oral presentations in AVN 3700 and AVN 4990 so that students begin with short (2-3 minute) presentations of their topics, research questions, and logic models before they get to the more substantial formal presentations of their research proposals and their capstone project results, which are typically presented to a panel of faculty reviewers. The ladder approach helps students build confidence, become more adept at articulating their ideas, and better prepare for questions and criticism. Another area of concern is the appropriate use of presentation software. Our assessment of the presentations in 3700 and 4990 suggest the need for additional training in this area. We are exploring how this might be integrated into our curriculum.</p>
<p><b>SLO 6</b></p>	<p>Our assessment of this outcome focuses on the exit interviews conducted with our graduating seniors. All students interviewed recognize the need for learning beyond their formal education but that each has different ideas about what that looks like. Not surprisingly, because of the nature of the Air Transport Concentration and the fact that graduates of the concentration go into so many different career fields, there is no consensus about what constitutes life-long learning or what continuing personal and professional development might look like. We cannot determine from our assessment mechanisms if they actually engage in life-long learning but are confident that they recognize the need for it and have some idea of what that means to themselves personally and professionally.</p>

SLO 7	In addition to assessment of the relevant questions on the field exam described below, we have initiated a new exercise in AVN 4990, which focuses on “hot topics” in aviation and will allow us to assess progress towards this general outcome. In Spring 2021, the topics related to alternative fuels, commercial space, and battery technology. In Spring 2022, the topics are aviation post-COVID, workforce challenges, and environmental issues. Students participated in the identification of the hot topics in 2021. Topic for 2022 were selected by the instructor. While the field exam assessment finds that students are proficient in this area, we only have one semester of data to examine for the hot topics exercise. We look forward to assessing the impact of this approach as we get additional data.
SLO 8	All students in the ATA concentration are required to complete an internship. All internships require that students complete a project, a portfolio, or a research paper which in turn requires that the demonstrate their ability to apply techniques, skills, and the use technology for professional practice.
SLO 9	Per our assessment plan, we rely on the field exam administered in AVN 4990 for data on this general outcome. As noted in the more detailed explanation of the role the field exam plays in our assessment efforts, our goal that 80% of students are proficient or better has been met, but we have also identified a couple areas of concern. For example, while we have an international aviation course, much of our curriculum is focused on the US. Our students do not get much exposure to contemporary international issues through the general curriculum. This is an area that needs additional discussion among the faculty.
SLO 10	Evidence from the research proposals developed in AVN 3700 and executed as capstone projects in AVN 4990 show that all students are at least proficient in this area. As noted earlier in this report, the iterative process of proposal and project development we have implemented in AVN 3700 and AVN 4990 helps our students in their efforts to identify compelling and relevant issues or problems and then offer meaningful conclusions and recommendations through their research. Students demonstrate their ability to leverage what they have learned across our curriculum to develop their proposals and capstone projects.
SLO 11	Relying again on data from research proposals (3700) and capstone research projects (4990), all students must demonstrate that their topics, research questions, and analyses are relevant to aviation decisionmakers and stakeholders. Answering the “so what question” demonstrates that they can translate their research into conclusions and recommendations that are relevant to the question of sustainability in aviation.

B. Comment

None