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SAINT LOUIS UNIVERSITY EST. 1818	**Saint Louis University**
June 21, 2018	Parks College of Engineering, Aviation and Technology
	Bachelor of Science in Aeronautics Concentration in Aviation Management

Department of Aviation Science

Annual Undergraduate Assessment Report

2017 – 2018

B.S. in Aeronautics, Concentration in Flight Science

To perform the undergraduate program assessment of the B.S. in Aeronautics, Flight Science concentration, the Department of Aviation Science performed undergraduate program assessment and individual course assessments and at the end of the fall 2017 and spring 2018 semesters. This process included the program-level SLO's which were scheduled to be assessed at the end of the fall 2017 and spring 2018 semesters as well as the assessment of individual courses to meet certain Student Learning Outcomes (SLO's) as determined by the department.

The program-level SLO's assessed during the 2017-2018 academic year were:

Fall 2017

A. Apply mathematics, science, and applied sciences to aviation related disciplines.
B. Analyze and interpret data.
C. Work effectively on multi-disciplinary and diverse teams.

Spring 2018

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.

Note: The department's flight courses were assessed at the end of the spring 2018 semester.

Results of the fall 2017 assessment of undergraduate program-level SLO's

The following program-level SLO'S assessed after the fall 2017 semester were:

A. Apply mathematics, science, and applied sciences to aviation related disciplines.
B. Analyze and interpret data.
C. Work effectively on multi-disciplinary and diverse teams.

Program-level SLO	Recommendation
A. Apply mathematics, science, and applied sciences to aviation related disciplines	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the FSCI 4022 Jet Flying Techniques II course as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.
B. Analyze and interpret data	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the FSCI 4022 Jet Flying Techniques II course as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.
C. Work effectively on multi-disciplinary and diverse teams	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the ASCI 4350 Team Resource Management course as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.

NOTE: The performance indicator rubrics and course evidence as provided by the instructor and indirect measures of student surveys of the courses listed above which were used by the department to assess the individual courses can be found in ***Appendix A: Fall 2017 Flight Science Program and Course Assessment Data***, of this report.

The department will work to ensure that all full-time and adjunct faculty submit evidence of student work in their respective courses to enable the department to perform a more thorough assessment of this program/concentration.

Results of the spring 2018 assessment of undergraduate program-level SLO's

The following program-level SLO'S assessed after the spring 2018 semester were:

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.

Program-level SLO	Recommendation
D. Make professional and ethical decisions.	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the results of the ASCI 4250 Applied Ethics and Standards course as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.
E. Communicate effectively, using both written and oral communication skills.	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the results of the ASCI 4350 Team Resource Management course as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.
F. Engage in and recognize the need for life-long learning.	There were no prior recommendations from previous program-level assessments of this SLO to assess during this cycle. The department used the results of the ASCI 1010 Professional Orientation and ASCI 4350 Team Resource Management courses as evidence of student ability to meet this program-level SLO. The department determined that students have satisfactorily met this program-level SLO and makes no recommendation for improvement at this time. In future assessment cycles the department will assess if course-level recommendations/improvements have improved student performance in this SLO.

NOTE: The performance indicator rubrics and course evidence as provided by the instructor and indirect measures of student surveys of the courses listed above which were used by the department to assess the individual courses can be found in ***Appendix B: Spring 2018 Flight Science Undergraduate Program and Course Assessment Data***, of this report.

The department will work to ensure that all full-time and adjunct faculty submit evidence of student work in their respective courses to enable the department to perform a more thorough assessment of this program/concentration.

Results of the fall 2017 undergraduate assessment of individual courses

Course Number	Course Name	Recommendation based on the Assessment Process
ASCI 1010-01	Professional Orientation (On-site)	Provide better examples of oral presentation techniques/styles to improve the group presentations. Devote additional time to topics covered.
ASCI 1010-10	Professional Orientation (Online)	Provide better examples of oral presentation techniques/styles to improve the student presentations; consider requiring students to provide an audio/visual presentation to be able to determine oral communication skills.
ASCI 1300-01	Aviation Weather (On-site)	None.
ASCI 1300-10	Aviation Weather (Online)	None.
ASCI 2200-01	Concepts in Aerodynamics	This year a series of quizzes was introduced to replace the homework assignments from prior years. First the homework was issued without a submission requirement, the material was covered in class, and an in-class multi-choice quiz was given. Quiz 1 solely covered basic mathematics which was required in the rest of the course. Quiz 8 solely aerodynamic concepts. The final exam was partitioned into a short answer numerical operations section, a multi-choice science section consisting of five questions, and a multi-choice aerodynamics section. The time taken for the quizzes reduced the net amount of time available in the course. Some non-essential material was omitted along with two review periods. It was noted that two questions contained in the final exam were answered incorrectly by all students. It was assumed as an instructor teaching oversight and the questions were removed from the final grades.
ASCI 3010-01	Jet Transport Systems I	Devote additional time to and use alternative teaching methods such as videos of the topics covered.
ASCI 4012-01	Jet Flying Techniques I	None.
ASCI 4013	Jet Flying Techniques I Lab	Use ASCI 4013 Jet Flying Techniques Final Flight Evaluation Form to better grade the final exam.
ASCI 4050-01	Human Factors (On-site)	None.
ASCI 4050-10	Human Factors (Online)	None.
ASCI 4250-01	Prof. Ethics & Standards (On-site)	As in any seminar setting, the students developed over the course of the semester to higher-level thinking skills. In the first four seminars students struggled with identifying the dilemmas and ethical principles or discussions lead to trivial or inappropriate solutions. Following mid-term break the final six sessions saw students meeting or exceeding expectations. Recommendations for fall 2018 course offering: (1) Revise/improve/update the seminar topics (2) consider addressing the issue of “moral hazard” (3) consider addressing the issue of “ethical relativism”

ASCI 4250-10	Prof. Ethics & Standards (Online)	None.
ASCI 4450-01	Aviation Law (On-site)	All students orally presented two case briefs in the course. However, no rubric was developed to measure these oral case briefs. This course did not fully address this learning outcome. For fall 2018 course offering: (1) Revise/improve/update the seminar topics to ensure oral and written communication skills are evidenced and measured (2) Assign and develop a rubric for "case briefs" (3)Assign and develop a rubric for a "research paper"
ASCI 4450-10	Aviation Law (Online)	None.

NOTE: The performance indicator rubrics and the course evidence provided by the instructor of the courses listed above which were used by the department to assess the individual courses can be found in ***Appendix A: Fall 2017 Flight Science Undergraduate Program and Course Assessment Data***, of this report.

Results of the spring 2018 undergraduate assessment of individual courses

Course Number	Course Name	Recommendation based on the Assessment Process
ASCI 1850-01	Safety Management Sys. (On-site)	The instructor determined that the strategy for developing rubrics to evaluate whether the instructor was successful in achieving certain metrics was somewhat ill-advised. Rather than including these assignments as distinct and separate or including the material within the context of a test, the instructor decided to assign them as optional homework assignments. The incentive for the students was a few additional points added to their grade. Regrettably, only a handful of students responded. The data provided in the above table is fictitious but represents my understanding of the potential outcomes. The instructor utilized an assignment that attempted to capture the outcomes in a narrative form. The instructor's thought process was that while a quantitative assessment would provide precision, a qualitative assessment would better enable the instructor to better understand how well the students understood the data. Overall, the instructor was surprised by the appearance spread in the quality of the work submitted. Recommendations: 1. Assessment materials will be required as opposed to optional 2. The instructor will consider additional quantitative measures to obtain more precision Similar to other outcome rubrics in this report, SLO D was evaluated using an optional, qualitative assignment. Consequently, the number of assignments that were returned was somewhat disappointing. Of the relatively small number of returns n=7, I was somewhat disappointed with the results of this (SLO D) assessment. Students seem to have a hard time articulating the meaning of both professionalism and ethical behavior. Although this course is taught in the freshman year of both the Flight Science and Aviation Management programs, the instructor had higher expectations given the discussions in class regarding professionalism and ethical behavior. Recommendations: 1. Additional discussion of the roles of professionalism and ethics in aviation 2. One or more take-home assignments aimed at reinforcing a better understanding of professionalism and ethics. 3. Assessment materials will be required as opposed to optional 4. I will consider additional quantitative measures to obtain more precision SLO H was evaluated using an optional assignment to which the feedback was somewhat disappointing. The way in which the instructor graded the narrative/qualitative data was to use the "needs improvement," "meets expectations," or "exceeds expectations" as noted in the assessment rubric. The qualitative assessment does not

		necessarily provide me with sufficient granularity to develop a broad enough insight on the effectiveness of the course. Recommendations: 1. Assessment materials will be required as opposed to optional 2. The instructor will consider additional quantitative measures to obtain more precision.
ASCI 1850-01	Safety Management Sys. (Online)	None.
ASCI 3020-01	Jet Transport Systems II	Provide more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations. Consider the use of alternative teaching methods such as videos of the topics covered.
ASCI 3062-01	Turbine Aircraft Transition	None.
ASCI 3100-01	Air Carrier Operations (On-site)	Most students have some sense of the basic ethical (and legal) issues surrounding the FAA's various tests for analyzing an operation. When presented with a website development scenario, most students are unable to identify the ethical principles involved and are unable to decide the correct action when presented with a scenario illustrating the development of a website that may be "acting" as an air carrier in common carriage in violation of the law and good ethical practices. Most students had a flawed analysis or insufficiently addressed the question: *"What is your interpretation of this scenario?"* For spring 2019 course offering: (1) Revise the approach to teaching chapter 1, "what is an air carrier?" (2) Consider addressing this SLO in a different topic/context within this course (3) Ensure this material is taught (repeated) in ASCI 4450 Aviation Law using court cases
ASCI 3100-10	Air Carrier Operations (Online)	Most students have some sense of the basic ethical (and legal) issues surrounding the FAA's various tests for analyzing an operation. When presented with a website development scenario, most students are unable to identify the ethical principles involved and are unable to decide the correct action when presented with a scenario illustrating the development of a website that may be "acting" as an air carrier in common carriage in violation of the law and good ethical practices. Most students had a flawed analysis or insufficiently addressed the question: "What is your interpretation of this scenario?" For spring 2019 course offering: (1) Revise the approach to teaching chapter 1, "what is an air carrier?" (2) Consider addressing this AABI learning outcome in a different topic/context within this course (3) Ensure this material is taught (repeated) in ASCI 4450 Aviation Law using court cases

		The Colgan Air Flight 3407 case--and the assigned questions--was used to highlight material from at least three textbook chapters and present the topics in a meaningful way; students learned how and why new regulations affecting virtually all units of an air carrier's operations were developed. Students were highly engaged in the topics. (1) This was a very effective vehicle for teaching students to identify, understand and reflect on today's issues that impact air carriers and their operational units. (2) Use the case again, with improvements, in the spring 2019 offering; for example, improve the "research questions" section. Questions were issued as an assignment to all students. Few students researched documents for evidence to support the responses to five questions. Many individuals were unable to apply previously learned facts and concepts to the five questions. Most students could not see the implications of sustainability for the regional air carrier industry and apply these to their future place within the industry. For spring 2019: (1) While this is a very useful topic and one introduced into this course for the first time, consider a different approach to addressing air carrier business models and sustainability. (2) Find a means of holding students accountable for research and developing their ability to apply facts and concepts to solve problems
ASCI 4022-01	Jet Flying Techniques II	Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria. In the context of ASCI 4022, a block of questions from the final comprehensive exam was taken to meet the two categories of this assessment rubric. There is significant overlap between the categories and the skills necessary to answer the questions with the block titled "principles of flight." This block contained 17 questions which were aligned with the rubric as follows: where <11=NI, 11-14=ME, and >14=EE. There is significant overlap between the categories and the skills necessary to answer the questions with the block titled "mental math." This block contained 10 questions which were aligned with the rubric as follows: where <7=NI, 7-9=ME, and >9=EE. Since this same exam format has been refined over the course of several years, no

		change is recommended. However, grades show that ¼ of the class had issues with basic interpretation and calculation questions related to professional practice. Since these skills are first introduced during the sophomore year, it is recommended that practice continue into the junior year. Recommendations 1. No change is recommended to this course that relates to this outcome. 2. Mental math for professional practice may be incorporated into ASCI 3010 & 3020.
ASCI 4023	Jet Flying Techniques II Lab	None.
ASCI 4350-01	Team Resource Management	The instructor noted that the development of a survey tool will better enable assessment of the student performance in this course.
FSCI 1150-01	Flight 1	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.
FSCI 1250-01	Basic Flight Foundations	Recommendations: 1. Greater emphasis should be placed on preparing students to apply the information presented in class. 2. Consider the inclusion of a greater number of examples, scenario-type questions, and individual or group problem-solving projects.
FSCI 1550-01	Flight 2	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. 3. All stage check flight deficiencies that occurred were during the Private Pilot End-of-Course exam. Therefore, student and instructor training should be improved to better focus on tasks included in Module 3 (cross-country operations, short and soft field takeoffs and landings, and Private Pilot checkride flight preparation).
FSCI 1560-01	Flight 2 Transition	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.
FSCI 2150-01	Flight 3	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors

		with greater detail regarding lesson content, training standards, and student expectations.
FSCI 2250-01	Instrument Flight Foundations	Recommend that student performance could be increased by adding more examples and homework problems. Students struggled to adequately apply scientific principles of instrument flying. Recommend that the instructor provide more in-class mathematics challenges and practice questions.
FSCI 2550-01	Flight 4	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.
FSCI 2650-01	Navigation Foundations	
FSCI 3550-01	Flight 5	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. 3. Deficiencies occurred during the Commercial Airplane Single-Engine and Multi-Engine End-of Course Flight Checks. Therefore, student and instructor training and syllabus revisions should better incorporate Commercial Pilot procedures and maneuvers as well as Multi-Engine emergency procedures.
FSCI 3700-01	Principles of Flight Instruction I	None.
FSCI 3750-01	Flight Instruction Preparation I	Recommendations: 1. In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. 2. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

NOTE: The performance indicator rubrics and the course evidence provided by the instructor of the courses listed above which were used by the department to assess the individual courses can be found in ***Appendix B: Spring 2018 Flight Science Undergraduate Program and Course Assessment Data***, of this report.

Course evidence collected as part of this assessment process is contained in a large file and is not posted on this website. The information can be found in ***Appendix C: 2017-2018 Flight Science Undergraduate Program and Course Evidence***, of this report and can be obtained by contacting Stephen G. Magoc, chairperson of the Department of Aviation Science stephen.magoc@slu.edu or at 314-977-8333.

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SAINT LOUIS UNIVERSITY EST. 1818	**Saint Louis University**
June 21, 2018	Parks College of Engineering, Aviation and Technology
	Bachelor of Science in Aeronautics Concentration in Aviation Management

Department of Aviation Science

Appendix A

Fall 2017 Flight Science

Undergraduate Program and Course Assessment Data

Direct Measures of Assessment

Performance Indicator Rubric

AABI Student Learning Outcome E: Communicate effectively using both Oral and Written Communication Skills – ORAL SKILLS ONLY

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Group Presentation**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Organization of material.	Confusing organization; weak problem statement or purpose; weak conclusion or summary; other sections are weak; weak use of citations and references.	Mostly logical and complete organization; adequate problem statement or purpose; adequate conclusion or summary; adequate use of citations and references.	Excellent organization; well-stated problem statement or purpose; strong conclusion or summary; thorough list of citations and references.
Provide evidence to support claims or inform audience.	Ideas not expressed clearly or details are weak; data analysis is weak; illustrations are lacking or confusing.	Ideas are generally expressed clearly and details are adequate; data analysis is adequate; illustrations support ideas, but have some mislabeling or do not accurately present evidence.	Ideas are well-developed, expressed clearly with many appropriate details; data analysis is thorough; illustrations clearly support core message(s), are properly labeled and captioned
Demonstrate the proper use of language.	Several errors in grammar, punctuation, spelling; several sentences have an awkward construction; proofreading appears to have been done hastily.	A few errors in grammar, punctuation, spelling; sentences are mostly well-crafted; appears to have been proofread, but further revision could improve text.	Minor errors, if any, in grammar, punctuation, and spelling; varied and creative sentence structure; demonstrates thorough proofreading and revision.
Delivery of an oral presentation.	Clarity of speech is uneven; delivery is halting; speaker is unsure of topic and appears nervous or disengaged; limited or sporadic eye contact with audience; limited or inappropriate use of physical gesture and facial expression.	Effective speaking voice; recovers easily from speaking errors; speaker is in command of the topic but appears slightly nervous in delivery; appropriate eye contact with audience throughout most of the presentation; use of physical gesture and facial expression is appropriate, but appears forced or artificial at times.	Strong, clear speaking voice easily understood by audience; speaker conveys confidence in talking about the topic; excellent eye contact with audience throughout presentation; use of physical gesture and facial expression conveys energy and enthusiasm.

Description of Assignment: Group presentation of a current or contemporary issue in the aviation industry. There were eight groups of students completing the assignment.

Using the performance indicator rubric, the groups scored as follows:

Organization of Material –

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Organization of Material	Organization, Evaluation	0	62.5	37.5
Evidence to Support Claims/Inform Audience	Problem/Need Identification	0	25	75
Proper use of Language	Verbal Delivery	0	62.5	37.5
Delivery of Oral Presentation	Visual Aids, Verbal Delivery, Nonverbal Delivery	37.5	25	37.5

To improve the course outcome, the instructor suggests providing better examples of oral presentations so that more of the students will be capable of exceeding the expectations while reinforcing the abilities of those students to exceed expectations.

Each group presentation was critiqued by the class using the “Rubric for Audience Critique of Group.” A compilation of the critique rubric scores for the eight groups follows.

Performance Indicator Rubric

AABI Student Learning Outcome G: Assess Contemporary Issues

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Quiz 1**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify contemporary issues related to the aviation industry.	When identifying contemporary aviation issues, important facts and details are missing.	Prioritizes contemporary aviation issues; ignores some less significant, yet relevant issues.	Effectively prioritizes contemporary aviation issues, including subtle details; does not include unrelated contemporary issues.
Recognize potential solutions.	Shows some understanding of contemporary aviation issues; provides some explanations of potential solutions but important facts are missing.	Shows adequate understanding of contemporary aviation issues; provides adequate explanation of potential solutions; missing the explanation of minor facts.	Shows in-depth understanding of contemporary aviation issues; provides in-depth explanation of potential solutions.

Description of Assignment: Quiz #1 was based on select readings from ***"Aviation Daily"*** over a period of 3-4 weeks.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify contemporary issues	Question #9	5.9	94.1	N/A
	Question #10	37.4	62.6	N/A
Recognize potential solutions	Extra Credit Question	29.4	11.8	58.8

Evidence of the assessment of Quiz 1, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome G: Assess Contemporary Issues

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Quiz 2**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify contemporary issues related to the aviation industry.	When identifying contemporary aviation issues, important facts and details are missing.	Prioritizes contemporary aviation issues; ignores some less significant, yet relevant issues.	Effectively prioritizes contemporary aviation issues, including subtle details; does not include unrelated contemporary issues.
Recognize potential solutions.	Shows some understanding of contemporary aviation issues; provides some explanations of potential solutions but important facts are missing.	Shows adequate understanding of contemporary aviation issues; provides adequate explanation of potential solutions; missing the explanation of minor facts.	Shows in-depth understanding of contemporary aviation issues; provides in-depth explanation of potential solutions.

Description of Assignment: Quiz #2 was based on select readings from ***"Aviation Daily"*** over a period of 3-4 weeks.

Using the performance indicator rubric, the groups scored as follows:

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify contemporary issues	Question #6	17.6	82.4	N/A
	Question # 7	11.8	89.2	N/A
Recognize potential solutions	Question #8	29.4	60.6	N/A

Evidence of the assessment of Quiz 2, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

AABI Student Learning Outcome G: Assess Contemporary Issues

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Quiz 3**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify contemporary issues related to the aviation industry.	When identifying contemporary aviation issues, important facts and details are missing.	Prioritizes contemporary aviation issues; ignores some less significant, yet relevant issues.	Effectively prioritizes contemporary aviation issues, including subtle details; does not include unrelated contemporary issues.
Recognize potential solutions.	Shows some understanding of contemporary aviation issues; provides some explanations of potential solutions but important facts are missing.	Shows adequate understanding of contemporary aviation issues; provides adequate explanation of potential solutions; missing the explanation of minor facts.	Shows in-depth understanding of contemporary aviation issues; provides in-depth explanation of potential solutions.

Description of Assignment: Quiz #3 was based on select readings from ***"Aviation Daily"*** over a period of 3-4 weeks.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify contemporary issues	Question #3	17.6	82.4	N/A
	Question #4	23.6	76.4	N/A
Recognize potential solutions	Extra Credit Question	44.1	26.5	29.4

Evidence of the assessment of Quiz 3, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome G: Assess Contemporary Issues

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 1**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify contemporary issues related to the aviation industry.	When identifying contemporary aviation issues, important facts and details are missing.	Prioritizes contemporary aviation issues; ignores some less significant, yet relevant issues.	Effectively prioritizes contemporary aviation issues, including subtle details; does not include unrelated contemporary issues.
Recognize potential solutions.	Shows some understanding of contemporary aviation issues; provides some explanations of potential solutions but important facts are missing.	Shows adequate understanding of contemporary aviation issues; provides adequate explanation of potential solutions; missing the explanation of minor facts.	Shows in-depth understanding of contemporary aviation issues; provides in-depth explanation of potential solutions.

Description of Assignment: Test 1 covered lecture material from the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify contemporary issues and/or Recognize potential solutions	Question #10	17.6	82.4	N/A
	Question #17	11.8	88.2	N/A
	Question #22	29.4	70.6	N/A
	Question #38	17.6	82.4	N/A
	Extra Credit Question	11.8	82.4	5.8

Evidence of the assessment of Test 1, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing better examples and/or increased discussion of topics so that more of the students will be capable of meeting the expectations while reinforcing the abilities of those students meeting expectations.

Performance Indicator Rubric

AABI Student Learning Outcome G: Assess Contemporary Issues

Course: **ASCI 1010 Professional Orientation** Semester Taught: **Fall 2017** Number of Students Scored: **34**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Final Exam**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify contemporary issues related to the aviation industry.	When identifying contemporary aviation issues, important facts and details are missing.	Prioritizes contemporary aviation issues; ignores some less significant, yet relevant issues.	Effectively prioritizes contemporary aviation issues, including subtle details; does not include unrelated contemporary issues.
Recognize potential solutions.	Shows some understanding of contemporary aviation issues; provides some explanations of potential solutions but important facts are missing.	Shows adequate understanding of contemporary aviation issues; provides adequate explanation of potential solutions; missing the explanation of minor facts.	Shows in-depth understanding of contemporary aviation issues; provides in-depth explanation of potential solutions.

Description of Assignment: The Final Exam covered lecture material from the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify contemporary issues and/or Recognize potential solutions	Question #4	11.8	88.2	N/A
	Question #9	58.8	41.2	N/A
	Question #15	58.8	41.2	N/A
	Question #21	2.9	97.1	N/A
	Question #34	5.8	94.2	N/A
	Question #44	11.8	88.2	N/A
	Question #47	0	100	N/A
	Question #60	5.8	94.2	N/A
	Extra Credit Question	26.	61.8	11.8

Evidence of the assessment of the Final Exam, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing better examples and/or increased discussion of topics so that more of the students will be capable of meeting the expectations while reinforcing the abilities of those students meeting expectations.

Performance Indicator Rubric

AABI Student Learning Outcome A: Apply Mathematics, Science and Applied Sciences to Aviation Related Disciplines

Course: **ASCI2200** Semester Taught: **2017 Fall** Number of Students Scored: **20**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Selected portions of the final exam**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / **Performance Indicator**	**Needs Improvement**		**Meets Expectations**		**Exceeds Expectations**	
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Does not understand the connections between the mathematic or scientific concept and the problem.	**Number: 4/20** Mean: 3.25 Median: 3	Identifies key mathematical or scientific concept applicable to the problem.	**Number: 15/20** Mean: 3.25 Median: 3	Identifies the relevant facts of the mathematical or scientific concepts for the given problem.	**Number: 1/20** Mean: 3.25 Median: 3
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Significant gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed incorrectly.	**Number: 3/20** Mean: 57.2 Median: 58	Minor gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed correctly.	**Number: 14/20** Mean: 57.2 Median: 58	Correctly applies the relevant facts of the mathematic or scientific concepts to the problem.	**Number: 3/20** Mean: 57.2 Median: 58

(rev. 10/11/2017)

Evidence Description / Performance Indicator	
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	The student is provided with a range of problems that require they find numerical values for given aircraft and aerodynamic properties. Students must first identify which parameters are needed, select and appropriate formula, rearrange the formula as necessary, and calculate a numerical value. The student is provided with a range of scientific questions pertaining to principles of flight in multi-choice format. Students must **identify the correct scientific concept** given a list of subtly different possible answers. For each set of parameters the z-score was calculated. Students scoring -1.0 or less, were considered as needing improvement. Students scoring +1.0 or greater were considered as exceeds expectation. The skewness of the distribution was considered to be an indicator of outliers.
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	The student is provided with a range of problems that require they find numerical values for given aircraft and aerodynamic properties. Students must first identify which parameters are needed, select and appropriate formula, **rearrange the formula as necessary, and calculate a numerical value.** The student is provided with a range of scientific questions pertaining to principles of flight in multi-choice format. Students must identify the correct concept given a list of subtly different possible answers. For each set of parameters the z-score was calculated. Students scoring -1.0 or less, were considered as needing improvement. Students scoring +1.0 or greater were considered as exceeds expectation. The skewness of the distribution was considered to be an indicator of outliers.

Performance Indicator Rubric

AABI Student Learning Outcome B: Analyze and Interpret Data

Course: **ASCI2200** Semester Taught: **2017 Fall** Number of Students Scored: **20**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Aircraft design project**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement		Meets Expectations		Exceeds Expectations	
Gather and document data	No systematic plan of data collection; data collection is disorganized, even random, and incomplete; data are poorly documented	**Number: 2/20** Mean: 32.5 Median: 33	Develops a simplistic plan of data collection; does not understand the scope of study; data collected are not well-documented, units are missing, or some measurements are incorrectly recorded.	**Number: 16/20** Mean: 32.5 Median: 33	Formulates a plan of data collection to attain a stated objective; carefully documents data collected.	**Number: 2/20** Mean: 32.5 Median: 33
Analyze and interpret data	Inadequate analysis and incorrect interpretation of the data is exhibited.	**Number: 2/20** Mean: 32.5 Median: 33	Adequately analyzes and interprets the data.	**Number: 16/20** Mean: 32.5 Median: 33	Comprehensively and objectively analyzes and synthesizes the data.	**Number: 2/20** Mean: 32.5 Median: 33
Report on findings and conclusions	An incomplete and/or inaccurate conclusion of the data analysis is reported.	**Number: 2/20** Mean: 32.5 Median: 33	Logically reports the findings and presents a possible conclusion of the data analysis.	**Number: 16/20** Mean: 32.5 Median: 33	Comprehensively reports the findings and presents a coherent conclusion of the data analysis.	**Number: 2/20** Mean: 32.5 Median: 33

(rev. 10/11/2017)

Evidence Description / Performance Indicator	
Gather and document data	The student is provided with a project to complete the design of an aircraft with an existing fuselage and powerplant. Students are expected to utilize the concepts and equations developed in class to determine what designs will result in functional flight surfaces which will meet the basic required criteria (stall speed, climb gradient, stable, etc). Students are then expected to implement their flight surface design within the X-Plane (version 9) plane maker and conduct simulated flight testing. **During the flight test portion they are expected to collect** and interpret values generated by the software. After a series of iterative designs, the students are required to submit a report, which details their design process, the theoretical results, the simulator/experimental results, and comment on any differences in results. For each set of parameters the z-score was calculated. Students scoring -1.0 or less, were considered as needing improvement. Students scoring +1.0 or greater were considered as exceeds expectation. The skewness of the distribution was considered to be an indicator of outliers.
Analyze and interpret data	The student is provided with a project to complete the design of an aircraft with an existing fuselage and powerplant. Students are expected to utilize the concepts and equations developed in class to determine what designs will result in functional flight surfaces which will meet the basic required criteria (stall speed, climb gradient, stable, etc). Students are then expected to implement their flight surface design within the X-Plane (version 9) plane maker and conduct simulated flight testing. During the flight test portion they are expected to collect and **interpret values generated by the software**. After a series of iterative designs, the students are required to submit a report, which details their design process, the theoretical results, the simulator/experimental results, and comment on any differences in results. For each set of parameters the z-score was calculated. Students scoring -1.0 or less, were considered as needing improvement. Students scoring +1.0 or greater were considered as exceeds expectation. The skewness of the distribution was considered to be an indicator of outliers.
Report on findings and conclusions	The student is provided with a project to complete the design of an aircraft with an existing fuselage and powerplant. Students are expected to utilize the concepts and equations developed in class to determine what designs will result in functional flight surfaces which will meet the basic required criteria (stall speed, climb gradient, stable, etc). Students are then expected to implement their flight surface design within the X-Plane (version 9) plane maker and conduct simulated flight testing. During the flight test portion they are expected to collect and interpret values generated by the software. After a series of iterative designs, the students are required to **submit a report, which details their design process, the theoretical results, the simulator/experimental results, and comment on any differences in results.** For each set of parameters the z-score was calculated. Students scoring -1.0 or less, were considered as needing improvement. Students scoring +1.0 or greater were considered as exceeds expectation. The skewness of the distribution was considered to be an indicator of outliers.

Course Evaluation Report for FL2017 ASCI-2200-01-Concepts in Aerodynamics (Saul Robinson) - Fall 2017

Parks College of Engineering, Aviation and Technology Course Evaluations

Total Enrollment 20
Responses Received 10
Response Rate 50.0%

Creation Date Wed, Jan 10, 2018

Interpretation Guidelines

Within this report instructors can view the aggregate of all student responses to Likert scale or multiple choice questions and individual responses to short answer questions.

I took this course (check all that apply)...

Options	Count
to meet a requirement of an undergraduate academic major or minor	10
to meet a requirement of a graduate/professional program or minor	0
to meet an undergraduate core/general education requirement	0
as an elective (not part of any major/minor/program or core/general education requirement)	0
Please explain:	0

Questions about the Student (agree)

1. I believe my academic background was sufficient to succeed in this course.

Options	Count	Percentage
Strongly Agree (4)	4	40.00%
Agree (3)	5	50.00%
Disagree (2)	1	10.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.30

2. The subject matter of this course was of interest to me before the course began.

Options	Count	Percentage
Strongly Agree (4)	6	60.00%
Agree (3)	4	40.00%
Disagree (2)	0	0.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.60

Questions about the Student (Dept & College Averages)

Question	Your Score		Department (Aviation Science)		College (Parks College of Eng, Av & Tch)	
	Mean	Response Count	Mean	Response Count	Mean	Response Count
I believe my academic background was sufficient to succeed in this course.	3.30	10	3.56	243	3.55	1391
The subject matter of this course was of interest to me before the course began.	3.60	10	3.63	243	3.48	1391
Overall	3.45	-	3.59	-	3.52	-

Questions about the Student (frequency)

1. I came to each class session prepared.

Options	Count	Percentage
Always (4)	6	60.00%
Often (3)	2	20.00%
Sometimes (2)	2	20.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.40

2. I invested enough time and energy to meet the course requirements.

Options	Count	Percentage
Always (4)	3	30.00%
Often (3)	6	60.00%
Sometimes (2)	1	10.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.20

3. I asked the instructor for help when I needed it.

Options	Count	Percentage
Always (4)	3	30.00%
Often (3)	5	50.00%
Sometimes (2)	2	20.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.10

Questions about the Student (Dept & College Averages)

Question	Your Score		Department (Aviation Science)		College (Parks College of Eng, Av & Tch)	
	Mean	Response Count	Mean	Response Count	Mean	Response Count
I came to each class session prepared.	3.40	10	3.55	243	3.53	1391
I invested enough time and energy to meet the course requirements.	3.20	10	3.56	243	3.60	1391
I asked the instructor for help when I needed it.	3.10	10	3.37	243	3.35	1391
Overall	3.23	-	3.49	-	3.50	-

Questions about the Course

1. Expected learning outcomes for the course were clearly communicated.

Options	Count	Percentage
Strongly Agree (4)	5	50.00%
Agree (3)	5	50.00%
Disagree (2)	0	0.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.50

2. Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.

Options	Count	Percentage
Strongly Agree (4)	5	50.00%
Agree (3)	5	50.00%
Disagree (2)	0	0.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.50

3. The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.

Options	Count	Percentage
Strongly Agree (4)	5	50.00%
Agree (3)	4	40.00%
Disagree (2)	1	10.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.40

4. The course required me to apply what I learned in new ways.

Options	Count	Percentage
Strongly Agree (4)	7	70.00%
Agree (3)	2	20.00%
Disagree (2)	1	10.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.60

5. The course challenged me intellectually.

Options	Count	Percentage
Strongly Agree (4)	9	90.00%
Agree (3)	1	10.00%
Disagree (2)	0	0.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.90

6. Overall, I think this course was excellent.

Options	Count	Percentage
Strongly Agree (4)	7	70.00%
Agree (3)	2	20.00%
Disagree (2)	1	10.00%
Strongly Disagree (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.60

Questions about the Course (Dept & College Averages)

Question	Your Score		Department (Aviation Science)		College (Parks College of Eng, Av & Tch)	
	Mean	Response Count	Mean	Response Count	Mean	Response Count
Expected learning outcomes for the course were clearly communicated.	3.50	10	3.67	243	3.55	1391
Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.	3.50	10	3.65	243	3.61	1391
The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.	3.40	10	3.61	243	3.48	1391
The course required me to apply what I learned in new ways.	3.60	10	3.61	243	3.58	1391
The course challenged me intellectually.	3.90	10	3.63	243	3.56	1391
Overall, I think this course was excellent.	3.60	10	3.47	243	3.39	1391
Overall	3.58	-	3.61	-	3.53	-

Please offer any comments and/or suggestions you wish to share about the course:

The system does not allow an instructor to connect ANY quantitative responses with an individual student. Unless a student identifies him or herself in the written comments, qualitative responses are similarly assured of confidentiality.

Comments
genuinely enjoyed this class and the topics we covered
The professor changed from homework to quizzes, and I believe it was a successful change.
Professor Robinson is an excellent teacher. At the beginning of the class he would line out what we were going to learn, and then go in depth over each line item which resulted in a well–designed lecture. He taught with enthusiasm and made a heavily based math and conceptual class interesting and engaging. One of the ways he did this was by allowing us students to fly a computer simulator that incorporated what we learned in a visual and interactive format. Another way he did this was by assigning us the design project. The design project although difficult allowed us to incorporate what we learned in class and help solidify our knowledge. However, it would have been beneficial if the project had more thorough instructions, and had an example completed project that could have been referenced. A negative about the class was there was no homework. and the quizzes were never handed back, so we were unable to see what we had missed and receive feedback. Although we could receive feedback if we went to his office, it is slightly intimidating to approach a professor with a problem even if they are friendly and welcoming. Overall, a great class and I wish more Parks classes were like this.

Questions about the Instructor: Saul Robinson

1. The instructor communicated ideas and information clearly.

Options	Count	Percentage
Always (4)	8	80.00%
Often (3)	2	20.00%
Sometimes (2)	0	0.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.80

2. The instructor demonstrated enthusiasm for the subject matter.

Options	Count	Percentage
Always (4)	9	90.00%
Often (3)	1	10.00%
Sometimes (2)	0	0.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.90

3. The instructor provided feedback/critique that helped me with subsequent work in the course.

Options	Count	Percentage
Always (4)	5	50.00%
Often (3)	2	20.00%
Sometimes (2)	3	30.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.20

4. The instructor treated students with respect.

Options	Count	Percentage
Always (4)	9	90.00%
Often (3)	1	10.00%
Sometimes (2)	0	0.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.90

5. The instructor was available for assistance when needed.

Options	Count	Percentage
Always (4)	6	60.00%
Often (3)	3	30.00%
Sometimes (2)	1	10.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.50

6. Overall, I think this instructor was excellent.

Options	Count	Percentage
Always (4)	8	80.00%
Often (3)	2	20.00%
Sometimes (2)	0	0.00%
Never (1)	0	0.00%

Statistics	Value
Response Count	10
Mean	3.80

Questions about the Instructor (Dept & College Averages)

Question	Your Score		Department (Aviation Science)		College (Parks College of Eng, Av & Tch)	
	Mean	Response Count	Mean	Response Count	Mean	Response Count
The instructor communicated ideas and information clearly.	3.80	10	3.58	247	3.47	1395
The instructor demonstrated enthusiasm for the subject matter.	3.90	10	3.73	247	3.68	1395
The instructor provided feedback/critique that helped me with subsequent work in the course.	3.20	10	3.50	247	3.46	1395
The instructor treated students with respect.	3.90	10	3.86	247	3.75	1395
The instructor was available for assistance when needed.	3.50	10	3.68	247	3.60	1395
Overall, I think this instructor was excellent.	3.80	10	3.62	247	3.55	1395
Overall	3.68	-	3.66	-	3.59	-

Please offer any comments and/or suggestions you wish to share about the instructor:

Saul Robinson

The system does not allow an instructor to connect ANY quantitative responses with an individual student. Unless a student identifies him or herself in the written comments, qualitative responses are similarly assured of confidentiality.

Comments
I really preferred when he didnt use the electronic projection of the notes we were taking in class on the board. harder to pay attention when room is dark and he's sitting at the desk writing on the tablet. (only did that like 2 days). very engaging when we used the sim in class. very knowledgable and engaging to the class, tough class, but i took a lot from it.
One can easily see his genuine love for aviation! Makes learning about aerodynamics fun!
Professor Robinson is an excellent teacher. At the beginning of the class he would line out what we were going to learn, and then go in depth over each line item which resulted in a well–designed lecture. He taught with enthusiasm and made a heavily based math and conceptual class interesting and engaging. One of the ways he did this was by allowing us students to fly a computer simulator that incorporated what we learned in a visual and interactive format. Another way he did this was by assigning us the design project. The design project although difficult allowed us to incorporate what we learned in class and help solidify our knowledge. However, it would have been beneficial if the project had more thorough instructions, and had an example completed project that could have been referenced. A negative about the class was there was no homework. and the quizzes were never handed back, so we were unable to see what we had missed and receive feedback. Although we could receive feedback if we went to his office, it is slightly intimidating to approach a professor with a problem even if they are friendly and welcoming. Overall, a great class and I wish more Parks classes were like this.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 1**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: Test 1 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques…for a given situation	Question #10	0	100	N/A
	Question #13	0	100	N/A
Explain specific techniques…of modern aviation practice	Question #5	26.7	73.3	N/A
	Question #19	13.3	86.7	N/A
	Question #43	40	60	N/A
Apply chosen techniques…to the given situation	Question #25	20	80	N/A
	Question #35	26.7	73.3	N/A
	Question #44	6.7	93.3	N/A
Reflect on the choice of techniques… to given situation	Question #32	13.3	86.7	N/A
	Question #57	13.3	86.7	N/A

Evidence of the assessment of Test 1, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 2**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: Test 2 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques…for a given situation	Question #2	0	100	N/A
	Question #4	0	100	N/A
Explain specific techniques…of modern aviation practice	Question #7	46.7	53.3	N/A
	Question #25	20	80	N/A
Apply chosen techniques…to the given situation	Question #32	20	80	N/A
	Question #57	46.7	73.3	N/A
Reflect on the choice of techniques… to given situation	Extra Credit Question	6.7	33.3	60

Evidence of the assessment of Test 2, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 3**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: Test 3 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques…for a given situation	Question #22	66.7	33.3	N/A
	Question #35	0	100	N/A
Explain specific techniques…of modern aviation practice	Question #11	13.3	86.7	N/A
	Question #48	40	60	N/A
Apply chosen techniques…to the given situation	Question #2	26.7	73.3	N/A
	Question #40	6.7	93.3	N/A
Reflect on the choice of techniques… to given situation	Extra Credit Question	13.3	32.9	53.8

Evidence of the assessment of Test 3, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Final Exam**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The Final Exam was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques…for a given situation	Question #3	0	100	N/A
	Question #11	6.7	93.3	N/A
Explain specific techniques…of modern aviation practice	Question #9	0	100	N/A
	Question #21	53.3	46.7	N/A
Apply chosen techniques…to the given situation	Question #15	6.7	93.3	N/A
	Question #18	0	100	N/A
Reflect on the choice of techniques… to given situation	Question #14	46.7	53.3	N/A
	Question #36	33.3	66.7	N/A
	Extra Credit Question	46.7	26.6	26.7

Evidence of the assessment of the Final Exam, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017**

Number of Students Scored:

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project):

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Test 1

Description of Assignment: Test 1 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables	Question #12	0	100	N/A
	Question #19	0	100	N/A
Analyze and justify solutions to a problem	Question #17	26.7	73.3	N/A
	Question #44	13.3	86.7	N/A
	Question #60	40	60	N/A

Evidence of the assessment of Test 1, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 2**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: Test 2 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables	Question #7	46.7	53.3	N/A
	Question #25	20	80	N/A
Analyze and justify solutions to a problem	Question #39	6.7	93.3	N/A
	Question #57	46.7	53.3	N/A

Evidence of the assessment of Test 2, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Test 3**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: Test 3 was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables	Question #25	0	100	N/A
	Question #34	33.3	66.7	N/A
Analyze and justify solutions to a problem	Question #14	6.7	93.3	N/A
	Question #28	46.7	53.3	N/A

Evidence of the assessment of Test 3, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: **ASCI 3010 Jet Transport Systems I** Semester Taught: **Fall 2017** Number of Students Scored: **15**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Final Exam**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The Final Exam was based on lecture material covered in the course.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeding Expectations
Formulate the problem and identify key issues/variables	Question #47	13.3	86.7	N/A
	Question #49	26.7	73.3	N/A
Analyze and justify solutions to a problem	Question #48	20	80	N/A
	Question #50	40	60	N/A

Evidence of the assessment of the Final Exam, showing the high, middle and low scores for the quiz follows.

To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

ASCI 4013 Jet Flying Techniques Final Flight Evaluation Form

Captain: _____ First Officer: _____

	YES	NO
~~**1 - Aircraft Performance [A]**~~		
~~• Correctly computes and applies takeoff performance to given airport conditions and aircraft configuration~~		
~~• Ensures the aircraft meets or exceeds performance requirements prior to takeoff~~		
~~• Utilizes reduced thrust takeoff procedures where applicable~~		
~~• Properly computes en-route, destination and alternate performance requirements~~		
~~• Ensures the landing runway meets landing performance requirements considering airport conditions~~		
~~• Utilizes proper crew briefing procedures to communicate performance requirements and considerations during initial briefing and prior to takeoff/landing~~		
~~**2 - Aircraft Manifest [B]**~~		
~~• Correctly completes the load manifest form~~		
~~• Ensures the aircraft is within weight and balance limits prior to takeoff~~		
~~• Complies with all aircraft weight limitations~~		
~~• Considers maximum takeoff weight in determining weight and balance restrictions~~		
3 - ATC and Company Communications		
• Complies with all ATC communications requirements, including timely communication of relevant information		
• Complies with all company communication requirements, including timely communication of relevant info		
• Complies with all ATC clearances, including altitude, speed and route clearances		
• Complies with Standard Operating Procedures during aircraft pushback and parking to include communications with ATC, ramp control and the ground crew		
4 - CRM Automation and Systems Management [H-4]		
• Appropriately monitors the operations of all aircraft systems		
• Appropriately operates aircraft systems as required for the flight condition		
• Demonstrates the ability to utilize all available levels of automation		
• Selects a level of automation consistent with the flight situation and aircraft state		
• Utilizes crew coordination procedures to ensure the FMS and autopilot are properly initialized and verified prior to takeoff.		
• Utilizes the FMS to enhance situational awareness and flight management		
• Monitors aircraft automation to ensure compliance with ATC clearances and restrictions		
• Utilizes proper crew procedures to insure communication and coordination of any system or automation changes		
5 - CRM Checklist Usage		
• Completes all checklists, flows and procedures in a timely manner as appropriate to the flight situation:		
o Safety Check / o After Takeoff Check		
o Originating Check / o 10,000' Check		
o Pre Start Check / o Descent Check		
o Engine Start Check / o Before Landing Check		
o Pre Taxi Check / o After Landing Check		
o Before Takeoff Check / o Shutdown Check /		
o Before Takeoff Final Items / o Terminating Check		
6 - CRM Communication and Coordination [C-2]		
• Complies with all ATC and company communications requirements, including timely communication of relevant information to ATC and company		
• Communicates appropriately with flight crew members, including required briefings and timely communication of other relevant information to the flight and cabin crew		
7 - CRM Decision Making [C-3]		
• Engages in decision making that considers the obligations of a professional flight crewmember		
• Engages in decision making that promote an environment of safety, compliance and professionalism		
• Engages in a participatory decision making style when conditions warrant, that considers the input of crew members		
8 - CRM Planning (PREP)		
• Continuously assesses the flight situation to identify the need for contingencies		
• Properly plans for potential contingencies		
• Determines an appropriate course of action when conditions dictate, including diversion to an alternate airport		

9 - CRM Situational Awareness [H-4]	YES	NO
• Continuously monitors flight progress to ensure navigation accuracy within appropriate navigation performance standards		
• Continuously monitors compliance with ATC clearances/requirements		
• Appropriately monitors the operation of all aircraft systems		
• Continuously monitors en-route, destination and alternate airport weather conditions		
• Continuously monitors fuel status and plans for a diversion where necessary		
• Appropriately recognizes and manages threats, errors and undesired aircraft states		
• Demonstrates an awareness of terrain and other flight hazards, including compliance with minimum flight altitudes		
10 - CRM Workload Management		
• Anticipates, manages and delegates workload as appropriate for the flight situation		
~~• Applies strategies to create time to complete required flight duties~~		
• Properly balances workload amongst the flight and cabin crew		
• Utilizes resources outside the aircraft to aid in managing workload.		
11 - Passenger Considerations		
• Properly operates all aircraft systems, including the FSB to ensure passenger comfort and safety		
• Provides timely announcements to passengers as required and/or appropriate		
12 - Professionalism [C-1]		
• Contributes to a safe and open flight deck environment		
• Clearly demonstrates inquiry and advocacy skills where appropriate		
• Strives to efficiently operate the aircraft without compromising safety, including the use of optimum speeds and descent profiles when able		
• Encourages others to perform their job duties in a safe and ethical manner		
13 - Regulations, OPSPECS, and Company Policies (Dispatch Requirements)		
~~• Ensures the dispatch release complies with all regulatory, OPSPEC and company dispatch requirements~~		
~~• Accounts for adverse weather conditions, including verifying the legality of destination and alternate airports~~		
~~• Verifies and adjusts the aircraft fuel load, in consultation with dispatch, as necessary for operational conditions~~		
~~• Ensures the aircraft is in an airworthy condition including compliance with the aircraft MEL~~		
~~• Identifies any NOTAMs and/or operational bulletins that may impact the planned flight~~		
~~• Completes all required post-flight activities~~		
14 - Standard Operating Procedures [H-1/2/3]		
• Consistently complies with all aircraft and company limitations including adhering to SOP and flight profiles		
• Properly operates all aircraft flight controls consistent with the phase of flight		
• Complies with all aircraft limitations, including airspeed and engine limitations		
• Properly configures aircraft external lighting consistent with the phase of flight		

15 - Training Scenarios - Abnormal Procedures	Scenario 1		Scenario 2		Scenario 3	
• Correctly identifies the abnormal condition						
• Correctly interprets the abnormal condition						
• Properly performs the required procedures appropriate to the abnormal condition						

16 - Training Scenarios - Emergency Procedures	Scenario 1		Scenario 2	
• Correctly identifies the emergency condition				
• Correctly interprets the emergency condition				
• Properly performs the required procedures appropriate to address the emergency condition				

17 - Training Scenarios - Irregular Operations (Threat and Error Management)		
• Appropriately recognizes and manages threats, errors and undesired aircraft states associated with irregular situations		
18 - Weather Avoidance		
• Takes action to manage or avoid adverse weather conditions consistent with safe operating practices, including:		
o Flight in icing conditions,		
o Thunderstorm and/or windshear avoidance		
o Turbulence/ mountain wave activity		
Evaluator Ranking (10 points)		

ASCI 4023 Jet Flying Techniques Final Flight Evaluation Form

Captain: _____ First Officer: _____

	YES	NO
1 - Aircraft Performance [A]		
• Correctly computes and applies takeoff performance to given airport conditions and aircraft configuration		
• Ensures the aircraft meets or exceeds performance requirements prior to takeoff		
• Utilizes reduced thrust takeoff procedures where applicable		
• Properly computes en-route, destination and alternate performance requirements		
• Ensures the landing runway meets landing performance requirements considering airport conditions		
• Utilizes proper crew briefing procedures to communicate performance requirements and considerations during initial briefing and prior to takeoff/landing		
2 - Aircraft Manifest [B]		
• Correctly completes the load manifest form		
• Ensures the aircraft is within weight and balance limits prior to takeoff		
• Complies with all aircraft weight limitations		
• Considers maximum takeoff weight in determining weight and balance restrictions		
3 - ATC and Company Communications		
• Complies with all ATC communications requirements, including timely communication of relevant information		
• Complies with all company communication requirements, including timely communication of relevant info		
• Complies with all ATC clearances, including altitude, speed and route clearances		
• Complies with Standard Operating Procedures during aircraft pushback and parking to include communications with ATC, ramp control and the ground crew		
4 - CRM Automation and Systems Management [H-4]		
• Appropriately monitors the operations of all aircraft systems		
• Appropriately operates aircraft systems as required for the flight condition		
• Demonstrates the ability to utilize all available levels of automation		
• Selects a level of automation consistent with the flight situation and aircraft state		
• Utilizes crew coordination procedures to ensure the FMS and autopilot are properly initialized and verified prior to takeoff.		
• Utilizes the FMS to enhance situational awareness and flight management		
• Monitors aircraft automation to ensure compliance with ATC clearances and restrictions		
• Utilizes proper crew procedures to insure communication and coordination of any system or automation changes		
5 - CRM Checklist Usage		
• Completes all checklists, flows and procedures in a timely manner as appropriate to the flight situation:		
○ Safety Check / ○ After Takeoff Check		
○ Originating Check / ○ 10,000' Check		
○ Pre Start Check / ○ Descent Check		
○ Engine Start Check / ○ Before Landing Check		
○ Pre Taxi Check / ○ After Landing Check		
○ Before Takeoff Check / ○ Shutdown Check /		
○ Before Takeoff Final Items / ○ Terminating Check		
6 - CRM Communication and Coordination [C-2]		
• Complies with all ATC and company communications requirements, including timely communication of relevant information to ATC and company		
• Communicates appropriately with flight crew members, including required briefings and timely communication of other relevant information to the flight and cabin crew		
7 - CRM Decision Making [C-3]		
• Engages in decision making that considers the obligations of a professional flight crewmember		
• Engages in decision making that promote an environment of safety, compliance and professionalism		
• Engages in a participatory decision making style when conditions warrant, that considers the input of crew members		
8 - CRM Planning (PREP)		
• Continuously assesses the flight situation to identify the need for contingencies		
• Properly plans for potential contingencies		
• Determines an appropriate course of action when conditions dictate, including diversion to an alternate airport		

9 - CRM Situational Awareness [H-4]	YES	NO
• Continuously monitors flight progress to ensure navigation accuracy within appropriate navigation performance standards		
• Continuously monitors compliance with ATC clearances/requirements		
• Appropriately monitors the operation of all aircraft systems		
• Continuously monitors en-route, destination and alternate airport weather conditions		
• Continuously monitors fuel status and plans for a diversion where necessary		
• Appropriately recognizes and manages threats, errors and undesired aircraft states		
• Demonstrates an awareness of terrain and other flight hazards, including compliance with minimum flight altitudes		
10 - CRM Workload Management		
• Anticipates, manages and delegates workload as appropriate for the flight situation		
• Applies strategies to create time to complete required flight duties		
• Properly balances workload amongst the flight and cabin crew		
• Utilizes resources outside the aircraft to aid in managing workload.		
11 - Passenger Considerations		
• Properly operates all aircraft systems, including the FSB to ensure passenger comfort and safety		
• Provides timely announcements to passengers as required and/or appropriate		
12 - Professionalism [C-1]		
• Contributes to a safe and open flight deck environment		
• Clearly demonstrates inquiry and advocacy skills where appropriate		
• Strives to efficiently operate the aircraft without compromising safety, including the use of optimum speeds and descent profiles when able		
• Encourages others to perform their job duties in a safe and ethical manner		
13 - Regulations, OPSPECS, and Company Policies (Dispatch Requirements)		
• Ensures the dispatch release complies with all regulatory, OPSPEC and company dispatch requirements		
• Accounts for adverse weather conditions, including verifying the legality of destination and alternate airports		
• Verifies and adjusts the aircraft fuel load, in consultation with dispatch, as necessary for operational conditions		
• Ensures the aircraft is in an airworthy condition including compliance with the aircraft MEL		
• Identifies any NOTAMs and/or operational bulletins that may impact the planned flight		
• Completes all required post-flight activities		
14 - Standard Operating Procedures [H-1/2/3]		
• Consistently complies with all aircraft and company limitations including adhering to SOP and flight profiles		
• Properly operates all aircraft flight controls consistent with the phase of flight		
• Complies with all aircraft limitations, including airspeed and engine limitations		
• Properly configures aircraft external lighting consistent with the phase of flight		

15 - Training Scenarios - Abnormal Procedures	Scenario 1		Scenario 2		Scenario 3	
• Correctly identifies the abnormal condition						
• Correctly interprets the abnormal condition						
• Properly performs the required procedures appropriate to the abnormal condition						

16 - Training Scenarios - Emergency Procedures	Scenario 1		Scenario 2	
• Correctly identifies the emergency condition				
• Correctly interprets the emergency condition				
• Properly performs the required procedures appropriate to address the emergency condition				

17 - Training Scenarios - Irregular Operations (Threat and Error Management)		
• Appropriately recognizes and manages threats, errors and undesired aircraft states associated with irregular situations		
18 - Weather Avoidance		
• Takes action to manage or avoid adverse weather conditions consistent with safe operating practices, including:		
o Flight in icing conditions,		
o Thunderstorm and/or windshear avoidance		
o Turbulence/ mountain wave activity		
Evaluator Ranking (10 points)		

DEPARTMENT OF AVIATION SCIENCE
ASSESSMENT OF UNDERGRADUATE PROGRAM STUDENT LEARNING OUTCOMES
FALL 2017

ASCI 4250 PROFESSIONAL ETHICS AND STANDARDS
SECTION 01 ON CAMPUS

Program Student Learning Outcomes

- D - Make professional and ethical decisions
- E – Communicate effectively, using both written and oral communication skills
- G – Assess contemporary issues
- K - Apply knowledge of business sustainability to aviation issues

Direct measures:
The student learning outcome will be assessed using data from:
The results of embedded questions in quizzes; mid-term examinations, final examinations, and case studies and evidence of the student knowledge of course topics found in the research paper requirement of the course will be obtained from the ASCI 4250 course.

NOTES – FALL 2017
No instructor comments

Subjects/Topics
No instructor comments

Methodology
No instructor comments

Performance Indicator Rubric

AABI Student Learning Outcome D: Make Professional and Ethical Decisions

Course: **ASCI 4250 Professional Ethics and Standards** Semester Taught: **Fall 2017**
Number of Students Scored: **22 enrolled**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identifies ethical problems	Seminar	0	100%	0
Identifies ethical (and legal) principles involved	Seminar	0	100%	0
Decide on the proper ethical action and be prepared to deal with opposing arguments	Seminar	0	100%	0
Summary	Ten seminar sessions and topics; one per week. Two student seminar moderators randomly selected for each session to lead small-group discussion. Students managed each seminar and had to apply ethical theories and ethical decision-making frameworks to the practical, industry-oriented dilemmas presented. The purpose is to create understanding by bringing differing viewpoints and questions to the seminar; to apply professional and ethical standards to ethical dilemmas in various aviation settings. During the informal discussions, students grew to identify the ethical dilemmas, to identify appropriate ethical theories, and were able to decide on the proper ethical action and deal with opposing arguments from other students within the group. As in any seminar setting, the students developed over the course of the semester to higher-level thinking skills. In the first four seminars students struggled with identifying the dilemmas and ethical principles or discussions lead to trivial or inappropriate solutions. Following mid-term break the final six sessions saw students meeting or exceeding expectations.			

Instructor's Recommendations	For fall 2018 course offering: (1) Revise / improve / update the seminar topics (2) consider addressing the issue of "moral hazard" (3) consider addressing the issue of "ethical relativism"
Department Recommendations	

Performance Indicator Rubric

AABI Student Learning Outcome E: Communicate effectively using both Oral and Written Communication Skills

Course: **ASCI 4250 Professional Ethics and Standards** Semester Taught: **Fall 2017**
Number of Students Scored: **22 enrolled**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Organization of material		100%	%	0
Provide evidence to support claims or inform audience.		100%	%	0
Demonstrate the proper use of language.				
Delivery of an oral presentation.		100%		
Summary	This course did not specifically address this learning outcome and no direct evidence was gathered, fall 2017.			
Instructor's Recommendations	For fall 2018 course offering: (1) Revise / improve / update the seminar topics to ensure oral and written communication skills are evidenced and measured			

	(2) Assign and develop rubric for a "research paper"
Department Recommendations	

Performance Indicator Rubric

AABI Student Learning Outcome G: Assess contemporary issues

Course: **ASCI 4250 Professional Ethics and Standards** Semester Taught: **Fall 2017**
Number of Students Scored: **22 enrolled**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identify contemporary issues related to the aviation industry	Seminar	0	100%	0
Recognize potential solutions	Seminar	0	100%	0
Summary	Ten seminar sessions and topics; one per week. All topics were relevant, contemporary issues. Students were able to identify and prioritize contemporary aviation issues and ignore some less significant, yet relevant, issues. Student demonstrated adequate understanding of contemporary aviation issues and provide adequate explanation of potential solutions.			
Instructor's Recommendations	For fall 2018 course offering: (1) Revise / improve / update the seminar topics to ensure new, relevant contemporary ethical dilemmas are presented (2) consider addressing the issue of "moral hazard" (3) consider addressing the issue of "ethical relativism"			

Department Recommendations	

Performance Indicator Rubric

AABI Student Learning Outcome K: Apply knowledge of business sustainability to aviation issues

Course: **ASCI 4250 Professional Ethics and Standards** Semester Taught: **Fall 2017**
Number of Students Scored: **22 enrolled**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identify legal and regulatory issues of aviation-related climate change; Identify economic, social and environmental concepts applied to aviation business.		100%	%	0
Find and analyze evidence of accepted practices of sustainability in aviation business settings.		100%	%	0
Apply acquired knowledge and facts of legal, economic, social and environmental sustainability concepts to a given aviation situation to solve problems.		100%		
Summary	This course did not specifically address this learning outcome and no direct evidence was gathered, fall 2017.			
Instructor's Recommendations	For fall 2018 course offering:			

	(3) Revise / improve / update the seminar topics to ensure new, relevant contemporary ethical dilemmas are presented to include “business sustainability in aviation”
Department Recommendations	

EVIDENCE

Order	Date	Moderators/Team/Student	Topic
	Sept 14		**Regulatory Capture**
7	**Nov 9**		**Whistleblowing in aviation**
9	**Nov 30**		**Corporate Responsibility**
8	**Nov 16**		**Cost-Benefit Analysis & Ethics**
10	**Dec 7**		**Gender Diversity in Aviation** **Racial Diversity in Aviation**
10	**Dec 7**		**Age Discrimination**
2	**Sept 28**		**Ethics & the Environment in Aviation Settings**
1	**Sept 21**		**Privacy & Confidentiality in Aviation Settings**
5	**Oct 26**		**Ethics of Technology Use in Aviation Settings**
6	**Nov 2**		**Ethics in Aviation Education (training; teaching)**
3	**Oct 5**		**Business Ethics, Safety, and the Airline Industry**
4	**Oct 12**		**Codes of Ethics: Value & Role in Aviation**

QUIZZES:

	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5
	Ethical Theories	Regulatory Capture; Privacy & Confidentiality	Ethical issues related to the environment & sustainability in aviation settings	Rights & Obligations; Ethical Use of Technology	Corporate Responsibility; Corporate Corruption; Cost Benefit Analysis
Class average	79	78	78	73	85

MID-TERM AND FINAL EXAMS:
Class average Mid-Term (online): 94
Class average Final: 84

	Seminar	Quizzes	Exams	Needs Improvement	Meets Expectations	Exceeds Expectations
Identifies Ethical Problem						
	Seminar	Quizzes	Exams	Needs Improvement	Meets Expectations	Exceeds Expectations
Identifies ethical principles involved		Quiz #1; Question #3	Final; Question #34		#34: 91%	#3: 100%

	Seminar	Quizzes	Exams	Needs Improvement	Meets Expectations	Exceeds Expectations
Decide on the proper ethical action and be prepared to deal with opposing arguments						

SEMINAR
ETHICS AND THE ENVIRONMENT
Airports and Aircraft
Moderators:

1. Framing Question: ***For those who fly—air carrier or small general aviation, as pilots or as passengers—can you fly with a clear conscience? After all, it is estimated that U.S. commercial airlines alone burn about 50,000,000 gallons of kerosene per day.***
2. Are passengers on airplanes **complicit** in causing harm? (to cause harm)
3. How do aviation **emissions compare to** other transportation sectors (rail, maritime, highway, etc.)?
4. Can this topic be addressed from a **virtue ethic framework**?
5. Are there special duties associated with your (complicit) role? . . . the **consequentialist.**
6. Can the **moral principles** be applied? (non-malevolence; utility; etc.)
7. Is airline **corporate environment and social responsibility** more or less a marketing tool?
   . . . just a buzzword?

8. What are the **environmental and social costs** as well as **benefits** of air transportation?
9. What measurable impacts does air transport have on human wellbeing in developing countries? . . . addressing the transport needs of the poor.
10. In the U.S., aviation traffic is approximately 47% leisure passenger travel, 31% business passenger travel, and 22% freight traffic. How much of this is subsistence or luxury distinction (consumption) regarding aviation emissions?
11. Should **aviation growth be limited** in the future? Can we develop the sense that people (and freight) need to fly less in the future?
12. Are **airport goals** different from that of air carriers?
    a. To what extent does St. Louis Lambert Airport contribute to this region's NO_x (nitrogen oxides) inventory?
        i. NOx: from high compression/high combustion emissions; i.e. engine exhausts
13. What are the future **environmental metrics** for aviation?
14. What **role is ICAO** (International Civil Aviation Organization) currently playing in the realm of aviation emissions?

SEMINAR

Ethics and the Use of Technology in Aviation Settings

- MODERATORS

Thursday, October 26, 2017

ASSIGNMENT TO STUDENTS

SET NO. 1

The moderators have asked you to review the three following documents.

http://www.slate.com/articles/technology/future_tense/2014/12/automation_in_the_cockpit_is_making_pilots_thinking_skills_duller.html

"Dumbing It Down in the Cockpit"

http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1093&context=hilltopreview

Western Michigan University publication: "***Legal and Ethical Considerations for Social Media Hiring Practices in the Workplace"***

https://www.ntsb.gov/news/events/Pages/2014_Asiana_BMG-Abstract.aspx

"NTSB Board Meeting: Crash of Asiana Flight Accident Summary"

Review the Summary and consider carefully those that address **technology use in the cockpit**

SET NO. 2

The moderators also expect you to read/review the articles posted within the Blackboard file on this subject. These three articles have been available for two weeks for your review.

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PRIVACY AND CONFIDENTIALITY
SEMINAR
Moderators:
MODERATORS' ASSIGNMENT TO STUDENTS:

http://www.wired.com/2014/07/malaysia-370-cockpit-camera/ Cockpit cameras

Part 1:

- Cockpit recorders, TSA…….how do you sacrifice privacy for safety?
    - http://www.faa.gov/privacy/ FAA Privacy Policy
        - Privacy Act of 1974
        - What we collect automatically
        - What other information we collect

1.) What is privacy? What is confidentiality?

*****ARTICLE*****

2.) Do you sacrifice your privacy or confidentiality for safety? If so, how much will you sacrifice?

PART 2:

(Confidential reporting and how it fits into Kohlbergs model)

3.) What do you think about confidential reporting?

4.) Does confidentiality fit into Kholberg's model? If so, where and why? And under what circumstances?

****EXERCISE****

5.) Does confidential reporting bring about "better practice" or do we have to use recorders so that nobody gets away with anything? How much are you willing to sacrifice for safety?

Part 3:

6.) If so ……..What about alternative fields? medicine? carpenter's union? military?

_____

SEMINAR

ETHICS IN AVIATION EDUCATION

MODERATORS:

1. Do we need to be taught ethics in aviation training? If so, why is it important?
2. Are pilots that receive their flight training without an ethics class less ethical than pilots that do?
3. Consider confidentiality. Do instructors have an obligation to keep their student's performance confidential? Is it acceptable for them to discuss matters such as abilities and mistakes with other instructors, students, ect.?
4. What responsibilities do the students have when it comes to professional and ethical behavior? Or, is it up to the instructors to teach them how to behave?
5. Read this: https://www.reddit.com/r/flying/comments/3d865o/i_failed_my_ppl_checkride_again/ Given how subjective check-rides are. Do you see any ethical issues with the process? Is it possible for the check pilot to be completely fair and impartial?
6. What ethical issues or dilemmas have you experienced in your flight training so far?

DEPARTMENT OF AVIATION SCIENCE
ASSESSMENT OF UNDERGRADUATE PROGRAM STUDENT LEARNING OUTCOMES
FALL 2017

ASCI 4450 AVIATION LAW
FALL 2017 - SECTION 01 ON CAMPUS (24)
FALL 2017 - SECTION 10 ONLINE (22)

Program Student Learning Outcomes

- D - Make professional and ethical decisions
- E – Communicate effectively, using both written and oral communication skills
- G – Assess contemporary issues
- I - Assess the national and international aviation environment

Direct measures:
The student learning outcome will be assessed using data from:
The scoring rubrics used to determine the results of student and group presentations of select case studies will be obtained from the ASCI 4450 course.

NOTES – FALL 2017
No instructor comments

Subjects/Topics
No instructor comments

Methodology
No instructor comments

Performance Indicator Rubric

AABI Student Learning Outcome D: Make Professional and Ethical Decisions

Course: **ASCI 4450 Aviation Law** Semester Taught: **Fall 2017**
Number of Students Scored: **24 enrolled on campus**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identifies ethical problems	Quiz 3; question 1	20%	80%	0
Identifies ethical (and legal) principles involved	Quiz 3; question 7	20%	80%	0
Decide on the proper ethical action and be prepared to deal with opposing arguments	Not measured; no evidence	100%	0%	0
Summary				
Instructor's Recommendations	For fall 2018 course offering: (1) Revise quiz questions to specifically reflect the three performance indicators (2) Obtain more specific data from the quiz results			
Department Recommendations				

Quiz 3; Question 1:

1. In ***FAA v. Charles F. Dress***, a flight instructor, you learned

    a. that it is reasonable for a flight instructor to rely on the students to obtain a full briefing prior to the flight.
    b. briefing tapes are retained for a period of five (5) days.

c. that students in flight training are more apt to make a mistake than a government-employed or government-contracted briefer.
d. an instructor is admonished to independently verify the pro-flight planning information provided to him/her by the student.

Quiz 3; Question 7:

1. What was the most important "take-away" from the **Thomas v. FAA** (1996) St. Louis area airplane flight demonstration for potential buyer case?

   a. There are no duties or responsibilities for acts or omissions of a second pilot in the cockpit of a single-pilot aircraft.
   b. A non-flying pilot is never actively involved in an airplane's operation, and, thus, is not liable for its unsafe operation.
   c. Two qualified pilots in a single-pilot airplane only need to formally identify who is "pilot in command" for the flight to remain clear of any potential FAA legal enforcement action following an accident.
   d. A pilot, even though not manipulating the controls, who is actively involved in an airplane's operation has a clear duty to not operate the airplane in a way that would endanger the life or property of another.

Performance Indicator Rubric

AABI Student Learning Outcome E: Communicate effectively, using both written and oral communication skills

Course: **ASCI 4450 Aviation Law** Semester Taught: **Fall 2017**
Number of Students Scored: **24 enrolled on campus**

Performance Indicator	Student Work Description of Assignment	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Organization of material	Case briefs	100%	0	0
Provide evidence to support claims or inform audience.	Case briefs	100%	0	0
Demonstrate the proper use of language.	Case briefs			
Delivery of an oral presentation.	Case briefs	100%	0	0

Summary	All students orally presented two case briefs in the course. However, no rubric was developed to measure these oral case briefs. This course did not fully address this learning outcome and no direct evidence was gathered, fall 2017.
Instructor's Recommendations	For fall 2018 course offering: (1) Revise / improve / update the seminar topics to ensure oral and written communication skills are evidenced and measured (2) Assign and develop rubric for "case briefs" (3) Assign and develop rubric for a "research paper"
Department Recommendations	

Performance Indicator Rubric

AABI Student Learning Outcome E: Assess contemporary issues

Course: **ASCI 4450 Aviation Law** Semester Taught: **Fall 2017**
Number of Students Scored: **24 enrolled on campus**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identify contemporary issues related to the aviation industry	Quiz 11; question 18	0	0%	0
Recognize potential solutions	No assessment; no evidence	100%	0%	0
Summary				
Instructor's Recommendations	For fall 2018 course offering: (1) Revise assessment methodology to ensure both "performance indicators" are measured and evidence is retained			

Department Recommendations	

Quiz 11; Question 18

Aviation is exposed to many potential liability claims. As students actively engaged in training within an FAA-approved pilot school, you should be aware of such exposure. Of the following statements, which **one(s)** is/are most truthful as a result of your studies? [there may be more than one correct response]

a. You've carefully reviewed your student's plans for a solo cross-country flight. All documents were checked. Your student has been flying in a safe and consistent manner. She's ready to go, and you sign her off. But, as with all your students, you still worry. You sweat out the trip with her. Relax, you really have nothing to worry about. You will never be dragged into personal injury litigation.
b. Educational malpractice claims boil down to a simple argument: the pilot was not taught what he/she needed to know to be able to safely fly the aircraft. In these cases, the plaintiffs claim that their injury was proximately caused by the flight school or seller's negligence in instructing the pilot in specific skills necessary to prevent the accident.
c. Under the law of negligence, the law imposes on each person a duty to exercise "due care" to protect others from unreasonable risk. In the flight instruction situation, an instructor owes this duty of care to his/her student and others. If the instructor fails to exercise due care, the instructor is negligent and is liable if the negligence causes damage.
d. Should there be an accident, an instructor can usually shift liability to an instructee (student) pilot who is flying the aircraft (PF; pilot flying) at the time of the event. After all, the "pilot in command" regulations of the FARs will be your defense.
e. Have your student sign a release of liability before you provide flight instruction. A release, also known as a waiver or exculpatory clause, can be an invaluable tool in reducing your flight instructor exposure to liability. The idea of an exculpatory clause is that it represents an expressed assumption of the risk. This is a widely recognized defense to claims of negligence.
f. The flight instructor has no further legal responsibility to the student pilot once the instruction is complete and the student has become a licensed pilot; this we can assume. A licensed pilot does not have a continuing, legally protected right to look to his/her flight instructor for compensation if he/she is injured in circumstances which he/she was not adequately prepared by that flight instructor to deal with (the circumstances). One cannot sue on the concept of educational malpractice.

Performance Indicator Rubric

AABI Student Learning Outcome I: Assess the national and international aviation environment

Course: **ASCI 4450 Aviation Law** Semester Taught: **Fall 2017**
Number of Students Scored: **24 enrolled on campus**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identify contemporary issues affecting the local/regional, national and/or international aviation environment.	Case briefs	100%	0	0
Reflection on contemporary issues affecting the local/regional, national and/or international aviation	Case briefs	100%	0	0
Summary	The material was covered within various legal cases; however, no assessment was made and no evidence retained.			
Instructor's Recommendations	For fall 2018 course offering: (1) Revise the case briefs and testing materials to specifically address these two "performance indicators" and ensure they are measured and evidence is provided			
Department Recommendations				

Performance Indicator Rubric

AABI Student Learning Outcome A: Apply Mathematics, Science and Applied Sciences to Aviation Related Disciplines

Course: FSCI 1250 – Basic Flight Foundations Semester Taught: Fall 2017 Number of Students Scored: 32

Type of Student Work Used for Assessment: Course Written Exams and Homework Assignments

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Does not understand the connections between the mathematic or scientific concept and the problem.	Identifies key mathematical or scientific concept applicable to the problem.	Identifies the relevant facts of the mathematical or scientific concepts for the given problem.
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Significant gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed incorrectly.	Minor gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed correctly.	Correctly applies the relevant facts of the mathematic or scientific concepts to the problem.

Description of Assignment: Student assessments consisted of four in-class, multiple-choice exams and multiple take-home written assignments.

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Weight and Balance/Performance Homework	10%	90%	---
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Weight and Balance/Performance Homework	10%	90%	---
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Exam 1, Questions 12	10%	90%	---
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Exam 1, Question 11	4%	96%	---
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Final Exam, Question 17	13%	87%	---

Recommendations: Greater emphasis should be placed on preparing students to apply the information presented in class. Consider the inclusion of a greater number of examples, scenario-type questions, and individual or group problem-solving projects.

Note: Attached is an example homework assignment, the final exam, and the highest and lowest-scoring student answer sheets for this exam.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 1250 – Basic Flight Foundations Semester Taught: Fall 2017 Number of Students Scored: 32

Type of Student Work Used for Assessment: Course Written Exams

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: Student assessments consisted of four in-class, multiple-choice exams.

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs	% Meets	% Exceeds

		Improvement	Expectations	Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Midterm Exam, Question 14	4%	96%	---
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Exam 1, Question 28	10%	90%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Exam 1, Question 51	10%	90%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Midterm Exam, Question 9	28%	72%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Midterm Exam, Question 12	41%	59%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Exam 1, Question 41	37%	63%	---

Recommendations: Greater emphasis should be placed on preparing students to apply the information presented in class. Consider the inclusion of a greater number of examples, scenario-type questions, and individual or group problem-solving projects.

Note: Attached are examples of two of the exams given in this course in addition to the highest and lowest-scoring student answer sheets for each.

Indirect Measures of Assessment

Student Surveys

Department Course Evaluation Report for Aviation Science - Fall 2017

Parks College of Engineering, Aviation and Technology Course Evaluations

Total Enrollment 528
Responses Received 190
Response Rate 35.98%

Creation Date Tue, Jan 02, 2018

Intrepretation Guidelines

This report includes the aggregate of all student responses to Likert scale or multiple choice questions for all courses taught within a department in the semester.

[QTitle] (Aggregate)

Options	Count
to meet a requirement of an undergraduate academic major or minor	165
to meet a requirement of a graduate/professional program or minor	31
to meet an undergraduate core/general education requirement	22
as an elective (not part of any major/minor/program or core/general education requirement)	1
Please explain:	0

Questions about the Student (Aggregate)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
I believe my academic background was sufficient to succeed in this course.	107	71	9	2	3.50	189
The subject matter of this course was of interest to me before the course began.	122	53	12	2	3.56	189

Questions about the Student (Breakdown by Course)

I believe my academic background was sufficient to succeed in this course.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	107	71	9	2	3.50	189
FL2017 ASCI-1010-01-Professional Orientation	11	7	2	0	3.45	20
FL2017 ASCI-1300-01-Aviation Weather	7	7	3	2	3.00	19
FL2017 ASCI-1300-10-Aviation Weather	7	8	0	0	3.47	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	4	5	1	0	3.30	10
FL2017 ASCI-3010-01-Jet Transport Systems I	4	1	0	0	3.80	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	5	2	0	0	3.71	7
FL2017 ASCI-4050-01-Human Factors	3	4	0	0	3.43	7
FL2017 ASCI-4050-10-Human Factors	9	4	0	0	3.69	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	4	0	0	3.67	12
FL2017 ASCI-4450-01-Aviation Law	5	3	1	0	3.44	9
FL2017 ASCI-4450-10-Aviation Law	6	6	0	0	3.50	12
FL2017 ASCI-5220-10-Aviation Safety Programs	5	2	0	0	3.71	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	6	2	0	0	3.75	8
FL2017 FSCI-1150-01-Flight 1	8	4	1	0	3.54	13
FL2017 FSCI-1250-01-Basic Flight Foundations	11	5	1	0	3.59	17
FL2017 FSCI-2150-01-Flight 3	4	2	0	0	3.67	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	4	5	0	0	3.44	9

The subject matter of this course was of interest to me before the course began.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	122	53	12	2	3.56	189
FL2017 ASCI-1010-01-Professional Orientation	14	4	2	0	3.60	20
FL2017 ASCI-1300-01-Aviation Weather	7	7	4	1	3.05	19
FL2017 ASCI-1300-10-Aviation Weather	7	6	2	0	3.33	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	6	4	0	0	3.60	10
FL2017 ASCI-3010-01-Jet Transport Systems I	4	1	0	0	3.80	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	4	3	0	0	3.57	7
FL2017 ASCI-4050-10-Human Factors	9	3	1	0	3.62	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	5	6	1	0	3.33	12
FL2017 ASCI-4450-01-Aviation Law	5	4	0	0	3.56	9
FL2017 ASCI-4450-10-Aviation Law	6	4	1	1	3.25	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	6	1	1	0	3.63	8
FL2017 FSCI-1150-01-Flight 1	10	3	0	0	3.77	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	6	0	0	0	4.00	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	6	3	0	0	3.67	9

Questions about the Student (Aggregate)

	Always	Often	Sometimes	Never	Average	Total Responses
I came to each class session prepared.	111	61	17	0	3.50	189
I invested enough time and energy to meet the course requirements.	110	63	15	1	3.49	189
I asked the instructor for help when I needed it.	106	40	31	12	3.27	189

Questions about the Student (Breakdown by Course)

I came to each class session prepared.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	111	61	17	0	3.50	189
FL2017 ASCI-1010-01-Professional Orientation	12	8	0	0	3.60	20
FL2017 ASCI-1300-01-Aviation Weather	8	7	4	0	3.21	19
FL2017 ASCI-1300-10-Aviation Weather	9	6	0	0	3.60	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	6	2	2	0	3.40	10
FL2017 ASCI-3010-01-Jet Transport Systems I	1	3	1	0	3.00	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	2	3	2	0	3.00	7
FL2017 ASCI-4050-01-Human Factors	3	2	2	0	3.14	7
FL2017 ASCI-4050-10-Human Factors	9	4	0	0	3.69	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	3	6	3	0	3.00	12
FL2017 ASCI-4450-01-Aviation Law	4	3	2	0	3.22	9
FL2017 ASCI-4450-10-Aviation Law	8	4	0	0	3.67	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	7	1	0	0	3.88	8
FL2017 FSCI-1150-01-Flight 1	10	3	0	0	3.77	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	3	2	1	0	3.33	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	5	4	0	0	3.56	9

I invested enough time and energy to meet the course requirements.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	110	63	15	1	3.49	189
FL2017 ASCI-1010-01-Professional Orientation	12	7	1	0	3.55	20
FL2017 ASCI-1300-01-Aviation Weather	7	10	1	1	3.21	19
FL2017 ASCI-1300-10-Aviation Weather	9	4	2	0	3.47	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	3	6	1	0	3.20	10
FL2017 ASCI-3010-01-Jet Transport Systems I	1	2	2	0	2.80	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	1	6	0	0	3.14	7
FL2017 ASCI-4050-01-Human Factors	5	0	2	0	3.43	7
FL2017 ASCI-4050-10-Human Factors	8	4	1	0	3.54	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	5	4	3	0	3.17	12

	Always	Often	Sometimes	Never	Average	Total Responses
FL2017 ASCI-4450-01-Aviation Law	5	3	1	0	3.44	9
FL2017 ASCI-4450-10-Aviation Law	8	4	0	0	3.67	12
FL2017 ASCI-5220-10-Aviation Safety Programs	7	0	0	0	4.00	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	7	1	0	0	3.88	8
FL2017 FSCI-1150-01-Flight 1	9	4	0	0	3.69	13
FL2017 FSCI-1250-01-Basic Flight Foundations	16	1	0	0	3.94	17
FL2017 FSCI-2150-01-Flight 3	3	3	0	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	4	4	1	0	3.33	9

I asked the instructor for help when I needed it.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	106	40	31	12	3.27	189
FL2017 ASCI-1010-01-Professional Orientation	9	3	6	2	2.95	20
FL2017 ASCI-1300-01-Aviation Weather	7	5	5	2	2.89	19
FL2017 ASCI-1300-10-Aviation Weather	12	1	2	0	3.67	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	3	5	2	0	3.10	10
FL2017 ASCI-3010-01-Jet Transport Systems I	2	0	3	0	2.80	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	3	3	1	0	3.29	7
FL2017 ASCI-4050-01-Human Factors	2	1	1	3	2.29	7
FL2017 ASCI-4050-10-Human Factors	10	1	2	0	3.62	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	5	2	3	2	2.83	12
FL2017 ASCI-4450-01-Aviation Law	6	1	1	1	3.33	9
FL2017 ASCI-4450-10-Aviation Law	9	2	0	1	3.58	12
FL2017 ASCI-5220-10-Aviation Safety Programs	5	2	0	0	3.71	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	4	1	3	0	3.13	8
FL2017 FSCI-1150-01-Flight 1	9	4	0	0	3.69	13
FL2017 FSCI-1250-01-Basic Flight Foundations	11	5	1	0	3.59	17
FL2017 FSCI-2150-01-Flight 3	4	2	0	0	3.67	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	5	2	1	1	3.22	9

Questions about the Course (Aggregate)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Expected learning outcomes for the course were clearly communicated.	130	51	7	1	3.64	189
Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.	132	42	12	3	3.60	189
The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.	121	55	11	2	3.56	189
The course required me to apply what I learned in new ways.	125	47	15	2	3.56	189
The course challenged me intellectually.	128	51	8	2	3.61	189
Overall, I think this course was excellent.	107	60	19	3	3.43	189

Questions about the Course (Breakdown by Course)

Expected learning outcomes for the course were clearly communicated.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	130	51	7	1	3.64	189
FL2017 ASCI-1010-01-Professional Orientation	15	4	1	0	3.70	20
FL2017 ASCI-1300-01-Aviation Weather	10	8	1	0	3.47	19
FL2017 ASCI-1300-10-Aviation Weather	11	4	0	0	3.73	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	5	5	0	0	3.50	10
FL2017 ASCI-3010-01-Jet Transport Systems I	4	1	0	0	3.80	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	5	2	0	0	3.71	7
FL2017 ASCI-4050-10-Human Factors	8	3	2	0	3.46	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	3	1	0	3.58	12
FL2017 ASCI-4450-01-Aviation Law	7	2	0	0	3.78	9
FL2017 ASCI-4450-10-Aviation Law	10	1	1	0	3.75	12
FL2017 ASCI-5220-10-Aviation Safety Programs	5	2	0	0	3.71	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	2	4	1	1	2.88	8
FL2017 FSCI-1150-01-Flight 1	10	3	0	0	3.77	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	3	3	0	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	6	3	0	0	3.67	9

Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	132	42	12	3	3.60	189
FL2017 ASCI-1010-01-Professional Orientation	16	3	1	0	3.75	20
FL2017 ASCI-1300-01-Aviation Weather	9	7	2	1	3.26	19

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
FL2017 ASCI-1300-10-Aviation Weather	12	3	0	0	3.80	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	5	5	0	0	3.50	10
FL2017 ASCI-3010-01-Jet Transport Systems I	3	2	0	0	3.60	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	5	2	0	0	3.71	7
FL2017 ASCI-4050-10-Human Factors	7	2	3	1	3.15	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	9	2	1	0	3.67	12
FL2017 ASCI-4450-01-Aviation Law	6	2	1	0	3.56	9
FL2017 ASCI-4450-10-Aviation Law	10	1	1	0	3.75	12
FL2017 ASCI-5220-10-Aviation Safety Programs	4	3	0	0	3.57	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	2	3	2	1	2.75	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	16	1	0	0	3.94	17
FL2017 FSCI-2150-01-Flight 3	4	1	1	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	7	2	0	0	3.78	9

The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	121	55	11	2	3.56	189
FL2017 ASCI-1010-01-Professional Orientation	14	5	1	0	3.65	20
FL2017 ASCI-1300-01-Aviation Weather	7	9	3	0	3.21	19
FL2017 ASCI-1300-10-Aviation Weather	10	5	0	0	3.67	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	5	4	1	0	3.40	10
FL2017 ASCI-3010-01-Jet Transport Systems I	3	2	0	0	3.60	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	4	3	0	0	3.57	7
FL2017 ASCI-4050-01-Human Factors	3	4	0	0	3.43	7
FL2017 ASCI-4050-10-Human Factors	8	1	4	0	3.31	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	4	0	0	3.67	12
FL2017 ASCI-4450-01-Aviation Law	5	3	0	1	3.33	9
FL2017 ASCI-4450-10-Aviation Law	11	0	1	0	3.83	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	3	3	1	1	3.00	8
FL2017 FSCI-1150-01-Flight 1	9	4	0	0	3.69	13
FL2017 FSCI-1250-01-Basic Flight Foundations	16	1	0	0	3.94	17
FL2017 FSCI-2150-01-Flight 3	4	2	0	0	3.67	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	5	4	0	0	3.56	9

The course required me to apply what I learned in new ways.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	125	47	15	2	3.56	189

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
FL2017 ASCI-1010-01-Professional Orientation	11	6	3	0	3.40	20
FL2017 ASCI-1300-01-Aviation Weather	6	10	2	1	3.11	19
FL2017 ASCI-1300-10-Aviation Weather	10	5	0	0	3.67	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	7	2	1	0	3.60	10
FL2017 ASCI-3010-01-Jet Transport Systems I	1	1	3	0	2.60	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	3	3	1	0	3.29	7
FL2017 ASCI-4050-10-Human Factors	9	1	3	0	3.46	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	7	4	0	1	3.42	12
FL2017 ASCI-4450-01-Aviation Law	6	3	0	0	3.67	9
FL2017 ASCI-4450-10-Aviation Law	10	1	1	0	3.75	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	5	2	1	0	3.50	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	16	1	0	0	3.94	17
FL2017 FSCI-2150-01-Flight 3	4	2	0	0	3.67	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	7	2	0	0	3.78	9

The course challenged me intellectually.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	128	51	8	2	3.61	189
FL2017 ASCI-1010-01-Professional Orientation	10	6	3	1	3.25	20
FL2017 ASCI-1300-01-Aviation Weather	7	11	0	1	3.26	19
FL2017 ASCI-1300-10-Aviation Weather	9	6	0	0	3.60	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	9	1	0	0	3.90	10
FL2017 ASCI-3010-01-Jet Transport Systems I	0	3	2	0	2.60	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	7	0	0	0	4.00	7
FL2017 ASCI-4050-01-Human Factors	4	3	0	0	3.57	7
FL2017 ASCI-4050-10-Human Factors	8	4	1	0	3.54	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	9	3	0	0	3.75	12
FL2017 ASCI-4450-01-Aviation Law	7	1	1	0	3.67	9
FL2017 ASCI-4450-10-Aviation Law	10	2	0	0	3.83	12
FL2017 ASCI-5220-10-Aviation Safety Programs	5	2	0	0	3.71	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	5	3	0	0	3.63	8
FL2017 FSCI-1150-01-Flight 1	10	3	0	0	3.77	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	1	1	0	3.82	17
FL2017 FSCI-2150-01-Flight 3	5	1	0	0	3.83	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	8	1	0	0	3.89	9

Overall, I think this course was excellent.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses

	Strongly Agree	Agree	Disagree	Strongly Disagree	Average	Total Responses
Overall	107	60	19	3	3.43	189
FL2017 ASCI-1010-01-Professional Orientation	11	7	2	0	3.45	20
FL2017 ASCI-1300-01-Aviation Weather	6	7	5	1	2.95	19
FL2017 ASCI-1300-10-Aviation Weather	9	5	1	0	3.53	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	7	2	1	0	3.60	10
FL2017 ASCI-3010-01-Jet Transport Systems I	1	4	0	0	3.20	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	3	3	1	0	3.29	7
FL2017 ASCI-4050-01-Human Factors	4	2	1	0	3.43	7
FL2017 ASCI-4050-10-Human Factors	8	1	3	1	3.23	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	6	5	1	0	3.42	12
FL2017 ASCI-4450-01-Aviation Law	5	3	1	0	3.44	9
FL2017 ASCI-4450-10-Aviation Law	10	1	1	0	3.75	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	1	4	2	1	2.63	8
FL2017 FSCI-1150-01-Flight 1	9	4	0	0	3.69	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	2	4	0	0	3.33	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	4	5	0	0	3.44	9

Questions about the Instructor: (Aggregate)

	Always	Often	Sometimes	Never	Average	Total Responses
The instructor communicated ideas and information clearly.	126	47	14	2	3.57	189
The instructor demonstrated enthusiasm for the subject matter.	155	24	9	1	3.76	189
The instructor provided feedback/critique that helped me with subsequent work in the course.	122	40	20	7	3.47	189
The instructor treated students with respect.	173	12	4	0	3.89	189
The instructor was available for assistance when needed.	142	33	13	1	3.67	189
Overall, I think this instructor was excellent.	138	35	13	3	3.63	189

Questions about the Instructor: (Breakdown by Course)

The instructor communicated ideas and information clearly.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	126	47	14	2	3.57	189
FL2017 ASCI-1010-01-Professional Orientation	14	5	1	0	3.65	20
FL2017 ASCI-1300-01-Aviation Weather	11	4	4	0	3.37	19
FL2017 ASCI-1300-10-Aviation Weather	12	2	0	1	3.67	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	8	2	0	0	3.80	10
FL2017 ASCI-3010-01-Jet Transport Systems I	3	2	0	0	3.60	5

	Always	Often	Sometimes	Never	Average	Total Responses
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	4	3	0	0	3.57	7
FL2017 ASCI-4050-01-Human Factors	5	1	1	0	3.57	7
FL2017 ASCI-4050-10-Human Factors	6	4	2	1	3.15	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	3	1	0	3.58	12
FL2017 ASCI-4450-01-Aviation Law	7	2	0	0	3.78	9
FL2017 ASCI-4450-10-Aviation Law	11	0	1	0	3.83	12
FL2017 ASCI-5220-10-Aviation Safety Programs	3	4	0	0	3.43	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	2	3	3	0	2.88	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	3	3	0	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	3	5	1	0	3.22	9

The instructor demonstrated enthusiasm for the subject matter.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	155	24	9	1	3.76	189
FL2017 ASCI-1010-01-Professional Orientation	16	4	0	0	3.80	20
FL2017 ASCI-1300-01-Aviation Weather	16	3	0	0	3.84	19
FL2017 ASCI-1300-10-Aviation Weather	12	2	1	0	3.73	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	9	1	0	0	3.90	10
FL2017 ASCI-3010-01-Jet Transport Systems I	3	0	2	0	3.20	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	6	1	0	0	3.86	7
FL2017 ASCI-4050-10-Human Factors	10	2	0	1	3.62	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	11	1	0	0	3.92	12
FL2017 ASCI-4450-01-Aviation Law	9	0	0	0	4.00	9
FL2017 ASCI-4450-10-Aviation Law	10	1	1	0	3.75	12
FL2017 ASCI-5220-10-Aviation Safety Programs	7	0	0	0	4.00	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	4	1	3	0	3.13	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	14	2	1	0	3.76	17
FL2017 FSCI-2150-01-Flight 3	3	2	1	0	3.33	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	8	1	0	0	3.89	9

The instructor provided feedback/critique that helped me with subsequent work in the course.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	122	40	20	7	3.47	189
FL2017 ASCI-1010-01-Professional Orientation	15	4	1	0	3.70	20
FL2017 ASCI-1300-01-Aviation Weather	12	3	1	3	3.26	19
FL2017 ASCI-1300-10-Aviation Weather	9	2	3	1	3.27	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	5	2	3	0	3.20	10

	Always	Often	Sometimes	Never	Average	Total Responses
FL2017 ASCI-3010-01-Jet Transport Systems I	3	1	1	0	3.40	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	5	2	0	0	3.71	7
FL2017 ASCI-4050-01-Human Factors	4	1	2	0	3.29	7
FL2017 ASCI-4050-10-Human Factors	7	2	2	2	3.08	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	4	0	0	3.67	12
FL2017 ASCI-4450-01-Aviation Law	6	3	0	0	3.67	9
FL2017 ASCI-4450-10-Aviation Law	9	2	1	0	3.67	12
FL2017 ASCI-5220-10-Aviation Safety Programs	7	0	0	0	4.00	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	1	2	4	1	2.38	8
FL2017 FSCI-1150-01-Flight 1	12	1	0	0	3.92	13
FL2017 FSCI-1250-01-Basic Flight Foundations	12	4	1	0	3.65	17
FL2017 FSCI-2150-01-Flight 3	3	3	0	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	4	4	1	0	3.33	9

The instructor treated students with respect.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	173	12	4	0	3.89	189
FL2017 ASCI-1010-01-Professional Orientation	18	2	0	0	3.90	20
FL2017 ASCI-1300-01-Aviation Weather	17	2	0	0	3.89	19
FL2017 ASCI-1300-10-Aviation Weather	15	0	0	0	4.00	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	9	1	0	0	3.90	10
FL2017 ASCI-3010-01-Jet Transport Systems I	5	0	0	0	4.00	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	7	0	0	0	4.00	7
FL2017 ASCI-4050-01-Human Factors	7	0	0	0	4.00	7
FL2017 ASCI-4050-10-Human Factors	11	1	1	0	3.77	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	9	1	2	0	3.58	12
FL2017 ASCI-4450-01-Aviation Law	9	0	0	0	4.00	9
FL2017 ASCI-4450-10-Aviation Law	12	0	0	0	4.00	12
FL2017 ASCI-5220-10-Aviation Safety Programs	7	0	0	0	4.00	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	8	0	0	0	4.00	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	16	1	0	0	3.94	17
FL2017 FSCI-2150-01-Flight 3	4	1	1	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	8	1	0	0	3.89	9

The instructor was available for assistance when needed.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	142	33	13	1	3.67	189
FL2017 ASCI-1010-01-Professional Orientation	16	4	0	0	3.80	20
FL2017 ASCI-1300-01-Aviation Weather	12	2	5	0	3.37	19
FL2017 ASCI-1300-10-Aviation Weather	11	0	4	0	3.47	15

	Always	Often	Sometimes	Never	Average	Total Responses
FL2017 ASCI-2200-01-Concepts in Aerodynamics	6	3	1	0	3.50	10
FL2017 ASCI-3010-01-Jet Transport Systems I	5	0	0	0	4.00	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	6	1	0	0	3.86	7
FL2017 ASCI-4050-01-Human Factors	5	2	0	0	3.71	7
FL2017 ASCI-4050-10-Human Factors	10	1	1	1	3.54	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	7	5	0	0	3.58	12
FL2017 ASCI-4450-01-Aviation Law	8	1	0	0	3.89	9
FL2017 ASCI-4450-10-Aviation Law	11	1	0	0	3.92	12
FL2017 ASCI-5220-10-Aviation Safety Programs	6	1	0	0	3.86	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	5	2	1	0	3.50	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	14	3	0	0	3.82	17
FL2017 FSCI-2150-01-Flight 3	3	3	0	0	3.50	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	6	2	1	0	3.56	9

Overall, I think this instructor was excellent.

	Always	Often	Sometimes	Never	Average	Total Responses
Overall	138	35	13	3	3.63	189
FL2017 ASCI-1010-01-Professional Orientation	13	6	1	0	3.60	20
FL2017 ASCI-1300-01-Aviation Weather	11	4	3	1	3.32	19
FL2017 ASCI-1300-10-Aviation Weather	11	2	2	0	3.60	15
FL2017 ASCI-2200-01-Concepts in Aerodynamics	8	2	0	0	3.80	10
FL2017 ASCI-3010-01-Jet Transport Systems I	3	2	0	0	3.60	5
FL2017 ASCI-4012-01-Jet Flying Tech I Lect	5	1	1	0	3.57	7
FL2017 ASCI-4050-01-Human Factors	6	1	0	0	3.86	7
FL2017 ASCI-4050-10-Human Factors	9	2	1	1	3.46	13
FL2017 ASCI-4250-01-Prof Ethics and Standards	8	3	1	0	3.58	12
FL2017 ASCI-4450-01-Aviation Law	7	2	0	0	3.78	9
FL2017 ASCI-4450-10-Aviation Law	11	1	0	0	3.92	12
FL2017 ASCI-5220-10-Aviation Safety Programs	7	0	0	0	4.00	7
FL2017 ASCI-5460-02-Qualitative Data Analysis	3	2	2	1	2.88	8
FL2017 FSCI-1150-01-Flight 1	11	2	0	0	3.85	13
FL2017 FSCI-1250-01-Basic Flight Foundations	15	2	0	0	3.88	17
FL2017 FSCI-2150-01-Flight 3	4	0	2	0	3.33	6
FL2017 FSCI-2250-01-Instrument Flight Foundations	6	3	0	0	3.67	9

AABInternational

SAINT LOUIS UNIVERSITY.	**Saint Louis University**
June 21, 2018	Parks College of Engineering, Aviation and Technology Bachelor of Science in Aeronautics Concentration in Aviation Management

Department of Aviation Science

Appendix B

Spring 2018 Flight Science

Undergraduate Program and Course Assessment Data

Direct Measures
Of
Assessment

ASCI 1850 Safety Management Systems

AABI Learning **Outcome B** - Analyze and Interpret Data

Description of Assignment: Provide a comprehensive explanation of a risk matrix.

Performance Indicator	*Assignment Type*	*% Needs Improvement*	*% Meets Expectations*	*% Exceeds Expectations*	Mean
Locate an example risk matrix. Provide a comprehensive explanation of the matrix, including the meanings of the X and Y axis and any color-coding of the cells	Scenario based Descriptive Qualitative	15%	65%	20%	N/A
Include an example risk assessment using the matrix and where the example risk assessment in the matrix the event would fall.	Scenario based Descriptive Qualitative	10%	70%	20%	N/A

An example copy of Needs Improvement, Meets Expectations and Exceeds Expectation follows

Summary:

My strategy for developing rubrics to evaluate whether I was successful in achieving certain metrics was somewhat ill-advised. Rather than including these assignments as distinct and separate or including the material within the context of a test, I decided to assign them as optional homework assignments. The incentive for the students was a few additional points added to their grade. Regrettably, only a handful of students responded. The data provided in the above table is fictitious but represents my understanding of the potential outcomes.

I utilized an assignment that attempted to capture the outcomes in a narrative form. My thought process was that while a quantitative assessment would give me precision, a qualitative assessment would better enable me to understand how well my students understood the data. Overall, I was surprised by the appearance spread in the quality of the work submitted.

Recommendations:

1. Assessment materials will be required as opposed to optional
2. I will consider additional quantitative measures to obtain more precision

Example – Needs Improvement

		Probability of Occurrence				
		Extremely improbable	Extremely remote	Remote	Reasonably probable	Frequent
Severity	Catastrophic	Review	Unacceptable	Unacceptable	Unacceptable	Unacceptable
	Hazardous	Review	Review	Unacceptable	Unacceptable	Unacceptable
	Major	Acceptable	Review	Review	Review	Review
	Minor	Acceptable	Acceptable	Acceptable	Acceptable	Review

The Meaning of the X-axis: The probability of an occurrence is the likelihood of the frequency for something to happen.

The Meaning of the Y-axis: The severity of an occurrence is the potential degree of damage caused by the incident.

The Darker shade is what the company considers to be unacceptable risk.

The Bolded outline the company considers to need to be reviewed and have the risks mitigated.

The White shade is what the company considers to be an acceptable risk to proceed with.

Example using the matrix:

There is a risk that people will fall or trip on unlit stairs. The severity would be considered minor but the probability would be considered frequent. Because of where it falls on the risk matrix it would go to be in the "reviewed" category. When it goes under review it can be mitigated in several different ways. One way the risk could be mitigated would be to add lighting to the stairs either along the edges or lights in the wall near the floor. If the stairs are outside the company could add glow tape to the stairs so that they are visible at night.

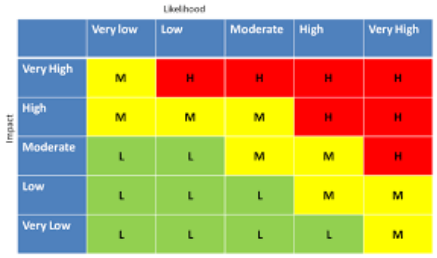
Commented [TK1]: Many better examples are readily available on the web. A grey scale does not necessarily convey enough of a demarcation between risks levels

Commented [TK2]: Sentence mechanics

Commented [TK3]: This is a prediction not a review

Commented [TK4]: People have died falling down the stairs

Example – Meets Expectations



I found this example of a risk matrix through google images, and it seems to be a pretty good one. Throughout the risk management process, we take the product from the severity and the likelihood of a hazard. This chart has the severity on the y axis and the likelihood of the hazard on the x axis. Both the y and x axis are in qualitative terms. The difference between qualitative and quantitative is that qualitative description uses words, ad quantitative descriptions use numbers. This example is also color coated. So, wants you decide how likely, and how severe a hazard is going to be, then you go to the corresponding color coated box where both the Colum and the row intersect. If it is green, then there is little risk associated with that hazard. If it is yellow, then there is marginal or moderate risk associated with that hazard. Lastly, if it is red, then there is a very high risk associated with this hazard.

Commented [TK5]: ??

Commented [TK6]: potentially

While flying an airplane, there are many hazards that could occur. When calculating the risk of that hazard we can use a chart like the one above. A very simple example could be icing of the wings. On a day like today, that risk is probably about 0, since we fly low and it is very hot out. That wasn't always the scenario, in fact, during the begging of this spring semester, there were many calls for icing that we would have to keep our eyes open for before we flew. Let's pretend that we are flying on a cold winter morning, which I did multiple times this semester. I

would say that the severity of icing is high. Icing on your wings can decrease lift and make the plane heavier. On many morning, there was a moderate chance of icing. When looking at the chart above, you can see that where moderate likelihood and high severity interact, there is a moderate risk. This means that we need to accept, mitigate, or reject the hazard then. Luckily, there are a couple things that we do that can mitigate this risk. We can throw baffles on the planes, and spray deicer fluid over the wings. This makes sure the engine stays warm, and the ice on the plane melts. So as long as the deicer fluid was in stock, I would still go out on a colder day. Now, if it gets to -10 degrease Celsius then we do not fly, and that's an example of us rejecting the risk from the hazard.

Your descriptions of a risks matrix are decent; however, your writing skills need work. When writing a technical assignment, avoid using the first-person and attempt to use a more-formal style of language and context.

Example – Exceeds Expectations

Commented [TK7]: Try to make these bigger. Good variety of risks levels

This risk matrix shows the hardness of a risk based on both the likelihood and severity. The x-axis represents the likelihood on a scale of 1-5 (improbable, remote, occasional, probable, and frequent). The y-axis represents the severity

Commented [TK8]: What do you mean by hardness?

on a scale of 1-5 (negligible, low, moderate, significant, and catastrophic). You multiply the number of likelihood and the number of severity to get the risk rating. Risk rating from 1 to 3 is labeled with dark green to show that the risk is desirable and requires no action. The rating from 4-6 is labeled with light green to show that the risk is acceptable and requires monitoring. The rating from 8-12 is labeled with yellow to show that it's undesirable and requires an action. The rating of 15 is labeled with light pink to show that it's unacceptable and requires an urgent action. The rating from 16-25 is labeled with red to show that it's catastrophic and requires an halt. A fictional example would be a bird strike that happens. I would rate 2 (remote) as a likelihood as it rarely happens and either a 2 or 3 (low or moderate) as a severity as it depends on the size and the number of birds. If you multiply that numbers, the risk rating comes out as 4 or 6. Since both number falls under the light green area, the risk would be acceptable, and we should monitor bird strikes.

Commented [TK9]: Good

Commented [TK10]: Good example

Commented [TK11]: Excellent explanation

ASCI 1850 Safety Management Systems

AABI Learning **Outcome D** - Make Ethical & Professional Decisions

Description of Assignment: Describe how Professional and Ethical Decision Making is a requirement for a strong Safety Management Systems

Performance Indicator	*Assignment Type*	*% Needs Improvement*	*% Meets Expectations*	*% Exceeds Expectations*	Mean
Provide a comprehensive explanation on why a "good" Safety Management System must be both professional and ethical. Explain how professional expectations are created in an SMS	Narrative Descriptive Qualitative	25%	55%	20%	N/A
Provide a comprehensive explanation on why a "good" Safety Management System must be both professional and ethical. Explain how ethical decision-making is encouraged in an SMS	Narrative Descriptive Qualitative	8%	63%	29%	N/A

An example copy of Needs Improvement, Meets Expectations and Exceeds Expectation follows

Summary:

Similar to other outcome rubrics in this report, Outcome D was evaluated using an optional, qualitative assignment. Consequently, the number of assignments that were returned was somewhat disappointing. Of the relatively small number of returns n=7, I was somewhat disappointed with the results of this (Outcome D) assessment. Students seem to have a hard time articulating the meaning of both professionalism and ethical behavior. Although this course is taught in the freshman year of both the Flight Science and Aviation Management programs, I had higher expectations given the discussions in class regarding professionalism and ethical behavior.

Recommendations:

1. Additional discussion of the roles of professionalism and ethics in aviation
2. One or more take-home assignments aimed at reinforcing a better understanding of professionalism and ethics.
3. Assessment materials will be required as opposed to optional
4. I will consider additional quantitative measures to obtain more precision

Example – Needs Improvement

Safety Management System is essential in the aviation organization because it is based on a service to customers. It is necessary that the SMS is professional. By professional, I think that management should be qualified and specialized enough to make decisions on a day to day basis to assure that the environment is safe for all stakeholders of the organization. Moreover, the SMS should incorporate ethical management as it does not only fulfill economic and legal goals but meets the ethical expectation from social norms in the work environment.

Commented [TK12]: Is this what makes a professional?

Commented [TK13]: No description on the meaning of ethics

Commented [TK14]: Did not answer the question asked

Example – Meets Expectations

A 'good' SMS is essential in the workplace. A SMS must be professional and ethical and this is done by management participating. A professional SMS is made from the top of command and works its way down to everyone involved in the company. A SMS must be professional so that the rules and policy are taken seriously. No one would want to work with a company that has a safety management system that simply doesn't care about safety. The way that management incorporates professionalism into a workplace is by having safety meetings and proper precautionary procedures. Professionalism in my opinion is a huge part of safety. Also, a SMS that is ethical is just as important. There are plenty of companies out there that only care about their revenue and not the lives of their customers or employees. An ethical SMS simply puts the lives and safety of the employees and customers first. Ethical-decision making is encouraged by having everyone accountable for their actions. An example for would be an aircraft mechanic working in a way that would make them feel that they would have to be comfortable flying in the aircraft that they are working on.

Commented [TK15]: Good, management must drive this

Commented [TK16]: Standards are a hallmark of professionalism

Commented [TK17]: I agree

Commented [TK18]: That is certainly part of ethics

Example - Exceeds Expectations

Within a company, professional expectations are created in a myriad of ways. The first level where it is implemented is safety policy. At the management level there are written rules and expectations put into place which set the tone and expectations. However, the main way that professional expectations are set is ultimately through safety culture. With safety culture being described most accurately by Peter Pronovost as “The way we do things around here...” It is what is tolerated in an environment based on the rules that leads to behavior.

Behavior in ethical decision-making is encouraged mainly by two things: who is the hero vs villain and reward for making the ethical decision. When a company looks favorably upon people who make the choices for safety of customers and employees over the people who get the job done the fastest but not safest it sets a tone. Rewards are always a good incentive to encourage favorable behavior, even if it can be described as bribery, it is also an effective tool of reward.

Commented [TK19]: Very good

Commented [TK20]: I agree

Commented [TK21]: I would add that this provides context for the norms of the organization

Commented [TK22]: No, it doesn’t. Good synthesis with safety culture

ASCI 1850 Safety Management Systems

AABI Learning **Outcome** H - Use the techniques, skills and modern technology necessary for professional practice.

Description of Assignment: Describe how a hazard/risks moves through the Safety Risk Management process and Safety Assurance Process.

Performance Indicator	*Assignment Type*	*% Needs Improvement*	*% Meets Expectations*	*% Exceeds Expectations*	Mean
Describe how technology might be used to facilitate the Safety Risk Management process Describe how hazards/risks moves through the Safety Risk Management process	Narrative Descriptive Qualitative	6%	59%	35%	N/A
Describe how technology might be used to facilitate the Safety Assurance process Describe how hazards/risks moves through the Safety Assurance process	Narrative Descriptive Qualitative	7%	64%	29%	N/A
Describe the professional skills necessary used in the Safety Risk Management Process	Narrative Descriptive Qualitative	16%	71%	13%	N/A
Describe the professional skills necessary used in the Safety Assurance Process	Narrative Descriptive Qualitative	18%	74%	8%	N/A

Example copies of Needs Improvement, Meets Expectations and Exceeds Expectation assignments follow

Summary: Like Outcome C above, Outcome H was evaluated using an optional assignment to which the feedback was somewhat disappointing. The way in which I graded the narrative/qualitative data was to use the “needs improvement,” “meets expectations,” “exceeds expectations” used in the assessment rubric. The qualitative assessment does not necessarily provide me with sufficient granularity to develop a broad enough insight on the effectiveness of the course.

Recommendations:

1. Assessment materials will be required as opposed to optional
2. I will consider additional quantitative measures to obtain more precision

Example – Needs Improvement

The Risk Management Process is very important in an SMS. Starting with the first step in the process, we must identify the hazard. Next it moves to risk assessment where the risk matrix is performed and the risk and hazards are analyzed at a better view. After this point in the process the SME and management can evaluate further and determine whether the hazard can be ignored or if mitigation needs to take place.

Commented [TK23]: Very weak explanation. No details whatsoever, no information on the decision making process associated with SRM

Example – Meets Expectations

Safety Risk Management is a design process where it begins "system description analysis" which is basically understanding the system and objectives of operation. Then it is the hazard identification as in what could go wrong in the system. Then it is Risk Analysis which is the probability times severity. Then it is the risk assessment which determining if the risk is acceptable or not. If it is unacceptable we implement risk controls and it is processed back again through the whole system to see if new risk is acceptable. Once risk is acceptable is transitions into the Safety Assurance process which is a performance process that starts with the study of how system is performing. Then we move on to data acquisition to further understand the operation Next is the data analysis, to see if the system is operating as expected. When system is operating well it goes back in the loop of Safety Assurance. When there are unacceptable and unexpected consequences arise from risk controls it goes back to SRM and it is processed as a hazard. Eventually if the risk control is not working some additional corrective action is required. Technology can help the SRM especially in the risk control section where unacceptable risks can be mitigated with new state of art technology in the design process that can eliminate the risk. It can also give assurance for the SA process where new the technology ensures the monitoring of risk controls

Commented [TK24]: Excellent

Commented [TK25]: Who conducts the risk analysis?

Commented [TK26]: Who conducts the assessment?

Commented [TK27]: Good

Commented [TK28]: Very good

Commented [TK29]: Solid work

Example - Exceeds Expectations

- First, we train and educated employees and workers about safety and identifying hazards. We the create procedure and give details on how equipment and task should work so that if a problem arise, it can be recognized.
- Second, We identify the hazard. Before the hazard can occur, we make what if situations to identify what could happen in ordinary operations.
- Third, once the risk has been identified, we determine how frequently the risk could happen and the severity or damage it could cause.
- Fourth, we make a decision after the likelihood and severity of the risk has been assessed on if it is acceptable or not.
- If the risk is accepted, it is sent to safety assurance. If the risk is unacceptable, it must be mitigated. It is then sent back through the the SRM until it is acceptable, or it is just thrown out completely.

Safety Assurance

- First, is the system operation where Subject Matter Experts will observe the risk that was accepted continuously to ensure that it is under control and that the safety of passengers, workers, and the company in general.
- Second, is the collection of data. Using systems and surveys allows the business to understand more about their operation. Examples can be safety audits, studies, reviews, survey and investigations. This allows to identify possible new hazards and improve the company.
- Third, is the analysis. Observes how the company is running and ensuring that it is working correctly for its intended purpose. If it is not working up to the standard, SME will find a way to correct it.

Commented [TK30]: Who does this?

Commented [TK31]: Who makes this decision?

Commented [TK32]: the the?

Commented [TK33]: Good details

- Fourth, system assessment which is after the assessment is done, the steps or decision that need to be made in order to ensure the performance and effectiveness of the risk controls. If everything is going smoothly, it is sent back through the safety assurance loop. If it is not working correctly, then it is sent to the SRM.
- If something is not working the best it is sent through corrective action where it is tweaked and fixed then sent back through safety assurance.

Commented [TK34]: Very good

a. Describe how technology might support SRM or SA

- Technology would be able to make both systems more efficient. With more reporting done online it would speed up the process of analyzing the systems. It would also allow for the monitoring of the systems to be less expensive with relying more on technology than people.

b. Describe what professional skills are necessary in the SRM and SA process

- The professional skills need would be a comprehensive understanding or the SRM and SA in order to analyze the systems and truly identify risk or hazards and how to best solve them. It also allows a person to understand the company at its core.

ASCI 1850 Safety Management Systems

AABI Learning **Outcome J** – Apply Pertinent knowledge in identifying and solving problems

Description of Assignment: Describe in each of the options discussed in class for dealing with risks (accept, mitigate, reject, etc.)

Performance Indicator	*Assignment Type*	*% Needs Improvement*	*% Meets Expectations*	*% Exceeds Expectations*	Mean
Within the discussion of mitigation, describe the "Safety Order of Precedence" Describe considerations that determine the appropriate mitigation strategy for a given situation	Narrative Descriptive Qualitative	6%	22%	72%	N/A
What is the appropriate hierarchy in the application of the safety order of precedence Describe the logic behind the order used in determination of mitigation strategies	Narrative Descriptive Qualitative	2%	38%	60%	N/A

Example copies of Needs Improvement, Meets Expectations and Exceeds Expectation assignments follow

Summary:

Like the other Outcomes in this assessment rubric, Outcome J was assessed with an optional assignment. Of the students who did respond, I was relatively pleased with their performance. Although I did not have a sufficient number of responses to drive significant changes in the course, the students did an excellent job (for the most part) and applying pertinent knowledge in identifying and solving problems. It will certainly continue to use the techniques I'm using now in this course although the assessment of all Outcomes will become a mandatory rather than optional assignment.

Recommendations:

1. Assessment materials will be required as opposed to optional
2. I will consider additional quantitative measures to obtain more precision

Example – Needs Improvement

An example of a hazard is high population of birds near the runway area. The probability of bird strikes occurring can be quite frequent and the magnitude of the risk is severe. If a bird strikes the cockpit screen, it can damage. Also if a bird strike hits the engine it can damage the engine and potentially cause an engine failure or multi engine failures. We cannot accept the risk of aircrafts taking off and landing knowing that there is a high bird population surrounding the airport and runway. We have to either reject the risk by waiting to execute an action until its clear or think about long term mitigation because the level of risk is definitely unacceptable to proceed with. For mitigation, the usual order of safety order of precedence is designing for minimum risk. We can redesign airport on area that lacks of trees and bird species. We could also cut down the ~~amount~~ number of trees available to promote low quantities of bird species. The next step of mitigation is incorporating safety devices into the operation but for this example there is really no safety devices that we can integrate to minimize risk. However, the next mitigation step is a possibility and that is providing warning devices. If there are birds surrounding the terrain of runway, we can incorporate a device that detects it and lets the crew and ATC know of the situation. This way we can delay the take-off or landing process. Lastly, the fourth mitigation and is developing procedures and training. This is the least preferred method as it involves humans and they are always prone to mistakes. For this situation, training pilots to discuss bird strikes during take-off and approach briefings when operating at airports can help reduce risk. Also training pilots to master skills when there is an act of an engine failure from a bird strike in simulation can boost their confidence as well.

Commented [TK35]: Sentence mechanics

Commented [TK36]: Or simply choose not to do the action that is risky

Commented [TK37]: Sentence mechanics

Commented [TK38]: It's not a step, it's a hierarchy

Commented [TK39]: This isn't really a bad explanation; however you do need to work on your writing skills.

Example – Meets Expectations

When dealing with the final decision in where a hazardous situation should stand, you must first look at the options. The options that you have during the Risk Management Process is to accept it, mitigate it, or reject it. Starting with accepting the risk is the easiest but sometimes the worst option. This means to simply accept the possible outcomes of the hazard even if it is catastrophic. Mitigation is probably the best option when dealing with risks. Mitigation is a way for management to deal with the problem using many different options. These options are the safety order of precedence. Starting with the first option, the best choice would be to design the risk out of the system. Sometimes that is not possible and you would have to move to the next option which is to incorporate safety devices. Safety devices can be used as warning devices in the cockpit. An automated warning system would be the last option before developing safety training, but would be effective. Although some techniques are better than the others, all have a major impact on mitigating and getting rid of risks. An example of this "flow" would be aircraft flying though volcanic ash. This has happened in the past when a volcano erupted in the northern Atlantic Ocean causing hundreds of delayed flights. How could we change this in the future? With the first option of designing the problem out of the system we could come up with a way that aircraft engines could filter the ashy air better. Next would be safety devices which could possibly tell you where the clean air is and a warning system that would tell the pilots how well the engines are operating. Next and final step would be training pilots how to deal with situations such as flying through volcanic ash.

Commented [TK40]: Sentence mechanics

Commented [TK41]: In technical writing, try to be more formal in your expression

Commented [TK42]: Why not?

Commented [TK43]: Goof job listing the SOP and then following up with examples.

Example – Exceeds Expectations

Describe in detail each of the options discussed in class for dealing with risks (accept, mitigate, reject, etc.) and why one of these examples might be the preferred response.

- **Identification -** Identification of undesired or adverse events that can lead to the occurrence of a hazard and the analysis of mechanisms by which these events may occur and cause harm
- **Accept** - When you accept a risk, it is said that the accepted risk could not cause any problems to the safety of passengers or that is so improbable that it wouldn't occur.
- **Mitigate** - Once a hazard is identified and not seen to be acceptable, it need to be mitigated meaning actions need to be taken to make the risk tolerable ~~in order to~~ to accept it.
- **Reject** - When the risk has been put through the mitigation process but isn't able to be accepted, it needs to be rejected ~~in order to~~ to provide people with safety.
    - Mitigation would be a preferred response because no one want to have a severe risk that could cause death or injury or the integrity of a company or the airplane.

a. Within the discussion of mitigation, describe the "Safety Order of Precedence" (in order)

- Design hazards out of the system
    - Replacing square windows with oval windows would be designing hazards out of the system.
- Incorporate safety devices that prevent hazards from actualizing (controls)
    - The stick shaker would be this kind of device. Let's pilots know that they need to correct something before it becomes catastrophic.
- Provide warning devices
    - There are sounds and lights that will start when criteria is met to ensure there is no problems

Commented [TK44]: Potentially acceptable problems

Commented [TK45]: Sound explanations, good job

Commented [TK46]: Good example, Dehavilland Comet

- Develop appropriate procedures and training to minimize risks
    - Create checklists to ensure that procedures are followed so that safety is prominent.

b. Provide examples of the use of the "Safety Order of Precedence"

- The use of the Safety order of precedence is best used where machinery is used so that people are safe and do not get hurt when around them.
- It is also beneficial in any organizations that deal with sensitive information so that nothing goes wrong and things go according to the plan.

Commented [TK47]: Excellent job

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **ASCI 3020-01 Jet Transport Systems II** Semester Taught: **Spring 2018** Number of Students Scored: **16**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Tests 1 – 3 and Final Exam, Extra Credit Assignments**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

(rev. 10/18/2017)

Description of Assignment: Test 1 was based on lecture material covered in the course and an extra credit assignment utilizing Boeing 767-300 CBT software.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	Test Average Score
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Question #37	--	100%	87.6%
	Question #42	12.5%	87.5%	
Explain the use of specific techniques, skills and tools of modern aviation practice.	Question #45	12.5%	87.5%	
	Extra Credit – AC Power #10	--	100%	
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Question #55	6.25%	93.75%	
	Question #57	12.5%	87.5%	
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Question #59	37.5%	62.5%	

A copy of a test, an answer sheet representing the high score earned and extra credit assignments used in this assignment can be found at the end of this performance rubric.

Description of Assignment: Test 2 was based on lecture material covered in the course and an extra credit assignment utilizing Boeing 767-300 CBT software.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	Test Average Score
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Question #4	12.5%	87.5%	90.3%
	Question #20	6.25%	93.75%	
Explain the use of specific techniques, skills and tools of modern aviation practice.	Question #3	6.25%	93.75%	
	Extra Credit – Intro to PW Engines #4	--	100%	
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Question #29	6.25%	93.75%	
	Question #31	43.75%	56.25%	
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Question #19	12.5%	87.5%	

A copy of a test, an answer sheet representing the high score earned and extra credit assignments used in this assignment can be found at the end of this performance rubric.

Description of Assignment: Test 3 was based on lecture material covered in the course and two extra credit assignments utilizing Boeing 767-300 CBT software.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	Test Average Score
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Question #4	43.75%	56.25%	84.5%
	Question #32	18.75%	81.25%	
Explain the use of specific techniques, skills and tools of modern aviation practice.	Question #10	6.25%	93.75%	
	Extra Credit – Exhaust/Reverse Thrust #1	6.25%	93.75%	
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Question #31	25%	75%	
	Question #47	--	100%	
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Question #36	12.5%	87.5%	
	Extra Credit – Oil Sys #6	--	100%	

A copy of a test, an answer sheet representing the high score earned and extra credit assignments used in this assignment can be found at the end of this performance rubric.

Description of Assignment: The final exam was based on lecture material covered in the course and five extra credit assignments utilizing Boeing 767-300 CBT software.

Performance Indicator	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Question #2	43.75%	56.25%	81.1%
	Extra Credit – Fuel Sys #6	--	100%	
Explain the use of specific techniques, skills and tools of modern aviation practice.	Question #8	6.25%	93.75%	
	Extra Credit – APU #8	6.25%	93.75%	
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Question #14	31.25%	68.75%	
	Question #38	--	100%	
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Question #30	6.25%	93.75%	
	Extra Credit – Eng Bleed #7	--	100%	

A copy of a test, an answer sheet representing the high score earned and extra credit assignments used in this assignment can be found at the end of this performance rubric.

Instructor assessment:
To improve the course outcome, the instructor suggests providing more class time on topics in which students need improvement so that more of the students will be capable of at minimum, meeting the expectations while reinforcing the abilities of those students currently meeting and exceeding expectations.

DATA SUPPORTING THE INSTRUCTOR'S ASSESSMENT OF THIS COURSE FOLLOWS

Performance Indicator Rubric

AABI Student Learning Outcome A: Apply Mathematics, Science and Applied Sciences to Aviation Related Disciplines

Course: _____ASCI 3062_____ Semester Taught: _____Spring 2018_____ Number of Students Scored: 11_____

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): _____

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Does not understand the connections between the mathematic or scientific concept and the problem.	Identifies key mathematical or scientific concept applicable to the problem.	Identifies the relevant facts of the mathematical or scientific concepts for the given problem.
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Significant gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed incorrectly.	Minor gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed correctly.	Correctly applies the relevant facts of the mathematic or scientific concepts to the problem.

	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Test 2 questions randomized (see question below)	-	100%	-
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Test 2 questions randomized (see question below)	-	100%	-

This question requires the students to apply their knowledge of limitations of the aircraft and also their knowledge of what a hot start entails.

What defines a hot start on our engine?

Given Answer:

exceeding 800 degrees for 5 seconds or exceeding 1000 degrees

Correct Answer:

exceeding 800 degrees for 5 seconds or exceeding 1000 degrees

This question requires the student to apply bernoulian principles to specific B200 systems, illustrating an application of knowledge from one subject area to another. They were very successful in this matter.

Fuel must be in the main tanks in order to get fuel out of the aux tanks, why?

Given Answer: The motive flow valves from the aux tanks require fuel to move through them to create a low pressure system that would draw fuel from the aux tanks.

Correct Answer: The motive flow valves from the aux tanks require fuel to move through them to create a low pressure system that would draw fuel from the aux tanks.

(rev. 10/11/2017)

Performance Indicator Rubric

AABI Student Learning Outcome C: Work Effectively on Multidisciplinary and Diverse Teams

Course: __ASCI 3062_____ Semester Taught: __spring 18_____ Number of Students Scored: 11_____

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): _____Flight Sim Lab Session _____

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Collaboration/Conflict management	Uncooperative; little respect for others and their opinions; me-centered.	Usually cooperative; collaborates and includes alternative perspectives as needed; understands team goals; usually strives for win-win.	Cooperative; values and includes alternative perspectives; we-centered; committed to team goals; strives for win-win.
Communication	Interrupts, bosses, ignores or makes fun of teammates; does not share information; decides without consulting teammates.	Listens to teammates and respects contributions, but may be either somewhat quiet or overly talkative; shares information as needed; respects teammate input.	Open communication; receptive to feedback; listens & speaks appropriately; makes sure all are informed; shares information.
Decision-making	Not interested in solving team problems; makes decisions without team; inflexible.	Problem-solver, but not always systematic; sometimes makes decisions based on preference rather than evidence; usually willing to adjust to team decisions.	Systematic approach to problem-solving; makes evidence-based decisions; seeks buy-in; willing to adjust.

(rev. 10/11/2017)

	Section of Audience Critique of Group Rubric	% Needs Improvment	% Meets Expectations	% Exceeds Expectations
Collaboration/ Conflict Managment	Sim Session 2	10%	90%	-
Communication	Sim Session 2	10%	90%	-
Decision Making	Sim Session 6	20%	80%	-

Collaboration/conflict management was evaluated in the second simulator session. In this session it was expected that the student work their way through a start up procedure and normal take off profile for the King Air B200. Collaboration was expected as the tasks differed greatly from the pilot flying vs the pilot not flying. The percentage that needs improvement shows a disregard for the pacing of their partner and attempts, even with success, to perform the entire takeoff procedure by themselves. Below is the profile and expectation for the normal take off.

Communication was also tested during this sim session, as it is critical for the proper performance of this profile, students that communicated well showed a knowledge of the appropriate call outs and requests from their side of the aircraft. Students who did not perform this task well, would miss call outs or not make an attempt and just do what they wanted I.E. pull the gear up, themselves.

Decision Making configuration changes are needed to be made at specific points along the precision approach profile that students were expected to complete on sim session 6. Decisions for speeds and specific configurations are expected to be made at appropriate times in order to assure a safe and reliable approach. Students who were not successful, either made their decisions late or neglected to configure the airplane correctly at all. Attached is the precision approach profile that they were expected to complete.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: _____ACSCI 3062_____ Semester Taught: _____Spring 18_____ Number of Students Scored: 11_____

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): __Essay work exploration of crash in Australia _____

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	36.3%	63.7 %	
Explain the use of specific techniques, skills and tools of modern aviation practice.	36.3%	63.7%	
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	36.3%	63.7%	
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	36.3%	63.7%	

The essay assignment of a B200 crash in (Tail number VH-ZCR) required the students to work within all 4 of these parameters.

They explored and Identified the skills and tools required for a successful completion of a flight after experiencing an engine failure in a king air B200, attached see attached essay paragraph 3.

They explained the skills required and why they were important in a successful completion of the flight. Again see attached paragraph 3

The students applied these techniques skills and tools in an evaluation of why this particular flight did not have a desirable result. See attached essay.

The students then used their own knowledge of systems and multiengine flying techniques to draw conclusions regarding this flight and what would have resulted in a desirable outcome and why this was not achieved. See attached.

Performance Indicator Rubric

AABI Student Learning Outcome D: Assess the national and International Aviation Environment

Course: **ASCI 3100 Air Carrier Operations** Semester Taught: **Spring 2018**
Number of Students Scored: **17 enrolled**

Performance Indicator	**Student Work Description of Assignment**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**
Identify contemporary issues affecting the local/regional, or national and/or international aviation environment	Case study questions, research and discussions. Colgan Air Flight 3407: *From 2009 to the present, how did we get to this point?*		100%	
Reflection on contemporary issues affecting the local/regional, national and/or international aviation environment	Case study questions, research and discussions. Colgan Air Flight 3407: *From 2009 to the present, how did we get to this point?*		100%	
Summary	This case--and the assigned questions--was used to highlight material from at least three textbook chapters and present the topics in a meaningful way; students learned *how* and *why* new regulations affecting virtually all units of an air carrier's operations were developed. Students were highly engaged in the topics.			
Instructor's Recommendations	(1) This was a very effective vehicle for teaching students to identify, understand and reflect on today's issues that impact air carriers and their operational units. (2) Use it again, with improvements, in the spring 2019 offering; for example, improve the "research questions" section.			
Department Recommendations				

Performance Indicator Rubric

AABI Student Learning Outcome K: Apply Knowledge of Business Sustainability to Aviation Issues

Course: **ASCI 3100 Air Carrier Operations** Semester Taught: **Spring 2018**
Number of Students Scored: **17 enrolled**

Performance Indicator	Student Work Description of Assignment	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify legal and regulatory issues of aviation-related climate change; Identify economic, social and environmental concepts applied to aviation business.	***Regional Air Carriers: Restructuring and Sustainability***. An examination of the issue of business sustainability and its relationship to air carrier operations. Bankruptcies. Identify elements from this air carrier operations course that may be contributing to this fragile state in which regionals exist. What lies ahead		100%	0
Find and analyze evidence of accepted practices of sustainability in aviation business settings.	*Regional Air Carriers: Restructuring and Sustainability*. An examination of the issue of business sustainability and its relationship to air carrier operations. Bankruptcies. Identify elements from this air carrier operations course that may be contributing to this fragile state in which regionals exist. What lies ahead	90%	10%	0
Apply acquired knowledge and facts of legal, economic, social and environmental	*Regional Air Carriers: Restructuring and Sustainability*. An examination of the issue of business sustainability	50%	50%	0

sustainability concepts to a given aviation situation to solve problems.	and its relationship to air carrier operations. Bankruptcies. Identify elements from this air carrier operations course that may be contributing to this fragile state in which regionals exist. What lies ahead			
Summary	Questions issued as an assignment to all students. Few students researched documents for evidence to support the responses to five questions. Many individuals were unable to apply previously learned facts and concepts to the five questions. Most students could not see the implications of sustainability for the regional air carrier industry and apply these to their future place within the industry.			
Instructor's Recommendations	For spring 2019: (1) While this is a very useful topic and one introduced into this course for the first time, consider a different approach to addressing air carrier business models and sustainability. (2) Find a means of holding students accountable for research and developing their ability to apply facts and concepts to solve problems			
Department Recommendations				

REGIONAL AIRLINES: RESTRUCTURING AND SUSTAINABILITY

The company was originally founded in 1965 as a typical fixed-base operator in Manassas, Virginia. It changed its name to Colgan Air, Inc. in early 1993. In 1997, it became a feeder for Continental Airlines for two years. Its partners eventually grew to include United and US Airways. Colgan became a subsidiary of Pinnacle Airlines Corp. in 2007 so that Pinnacle could gain access to Colgan's partners since Pinnacle was tied only to Northwest Airlines at the time. Colgan began providing service out of Newark Liberty International Airport as Continental Connection in early 2008. About one year later, the accident took place on a flight from Newark to Buffalo, NY. Pinnacle filed for bankruptcy in the spring of 2012. Colgan Air, Inc., went out of business in the fall of 2012. This is a brief history of only one company. Similar histories are found throughout the commuter/regional airline industry.

Let's examine the issue of ***business sustainability and its relationship to air carrier operations***.

1. **Identify the current feeder airlines for the following majors: Alaska, American, Delta, United**

   14 as of Dec 2017

   - Envoy Air (wholly owned by American)
   - Republic
   - Piedmont (wholly owned by American)

- PSA (wholly owned by American)
- Skywest
- ExpressJet (wholly owned by Skywest acquired 2010)
- Compass
- GoJet
- Tran States
- Mesa
- Endeavor Air
- Horizon Air (wholly owned by Alaska)
- Air Wisconsin
- CommutAir

May add PenAir (KS) Saab 340s (part 121?) and CapeAir (9K) Cessna 402s 9 pax part 135

2. **Of these feeders, identify those that are publicly held companies. If it is a publicly held company, we may find company filings on the Securities and Exchange Commission (SEC) web site.**
   Skywest is only one 2018
   Prior: Skywest and Republic were only two in 2015

3. **Can you identify a few regional airlines that have recently filed for bankruptcy? Who are they? Did they successfully reorganize and come back as viable airlines?**
   - Republic
     - Filed February 2016. Emerged May 2017.
   - Mesa
     - Filed January 2010 Emerged March 2011
     - Became privately held
   - Pinnacle
     - Filed April 2012 Emerged May 2013 but owned by Delta
     - Acquired by Delta (became Endeavor wholly owned by Delta June 2013)

   ExpressJet
   Came close in 2014-2016 but did not file Chapter 11
   Acquired by Skywest (which merged with ASA) August 2010

4. **What elements from this air carrier operations course can you identify as contributing to this fragile state in which regionals exist?**
   - FARs 9-seat cap Pt 135 op rules "scheduled pax" ops (one level of safety)
   - Mainline pilots unions: Scope clauses
   - 1500-hour regulation (pilot supply)
   - Flight/Duty limitations new regs impact
   - Training
   - Issues surrounding pay
   - Business model: Code-share agreements: capacity purchase agreements & pro-rate agreements (revenue-sharing)
   - Mainline carriers have ever-increasing control over
   - Financial / operational risk increasing (in relations with mainline carrier)
   - Operating margins (%) are very low

- Small communities losing air service
- Congress/Families of Colgan/Political interests blocking….

5. **What lies ahead for this feeder airline industry--this so-called regional airline industry? Going forward, what might the industry look like?**
   Regional restructuring is unfinished
   Pilot training reforms?

ASCI 3100 AIR CARRIER OPERATIONS

As a pilot might say, “let’s do a mid-course correction.”

We are in the sixth week of the semester.

1. ***What have you liked most about this course/class experience? Why?***
   16 of 16 students responded

- Content is relevant and instructor is knowledgeable, I feel I will come back to my notes from this class in my profession
- It is really helpful to understand what we might face on our future jobs and that it is directly connected to that
- The material is most interesting because it applies directly to my career
- Covering new material that applies to line of work. Material is interesting, and professor is experienced with material. TA is awesome.
- Group collaboration and open source. All of the documents on Blackboard. Why? Because, like you say, in the real world we will have people we can get help from.
- The material. Although difficult, it is very interesting. Blackboard docs/class discussion.
- The level of detail we get into on each section. It makes me feel like I’m really learning and preparing for the future.
- In-class exercises are my favorite because they allow for me to look up relevant material and understand it.
- Your teaching style and the extensive resources you have given us. I say this because I don’t want to enter this industry blindly and you have helped with that.
- In class collaboration with assignments, get different perspectives on different situations helps me.
- The ability to collaborate with peers in tests/quizzes. Because every opinion matters. Greater outcomes can be achieved together than individually.
- I like that we have been able to collaborate with our peers on quizzes because it helps us learn how to collectively prepare for an evaluation and allows us to teach each other.
- The group collaboration. We are able to get different perspectives on our topics.
- The stories that help explain the regulations that are being learned also group collaboration helps since it allows me to get a better understanding.
- All of the information with PRIA, DOT, etc. because its very helpful.
- Learning about how major air carriers operate because I didn’t realize how complex these operations were

2. *What have you disliked most about this course/class? Why?*

15 of 16 students responded

- The book can be difficult to understand at times
- I dislike the textbook merely because it seems far too vague in its description of some of the things we need to know.
- Some of the quiz questions are ambiguous i.e. The Drug Abatement Division is only explicitly stated as overseer of Part 145 in FARs/FSIMs.
- I do not know how to prepare for quizzes. A lot of material is covered and with some of the questions, it is hard to find with so many documents.
- The length of the quizzes.
- There sometimes not enough time for the level of detail we are getting into
- The speed of the course. A LOT of new information was expected to be learned in a very short amount of time.
- A lot of Blackboard material but still good
- Seems to sometimes go very fast, and sometimes can be a bit scattered. Feels like it's a lot of material covered in a short time.
- The amount of material. It can be overwhelming at times.
- Lectures are a drag. The instructor does his best on making it more interesting and relevant but there's room for more interest –related topics.
- Professor seems to be unapproachable, with sometimes criticism containing emotion. Afraid to talk to because he might make us feel stupid.
- I honestly have nothing, I enjoy the challenge you present and the informal explanation that what we are getting involved in is complex.
- Nothing, its difficult but I know regulations have No sympathy. Maybe the spelling.
- How hard it can be to find answers in the documents.

3. ***What would you like to be changed going forward?***
Only 7 (44%) of 16 students responded

….change from the facilitator/instructor

- Shorter quizzes
- Less ambiguous questions
- To slow down the course
- To go a bit slower
- More approachable demeanor, and neutral emotion criticism. Less emails
- If possible, make documents needed on quizzes more obvious. IF POSSIBLE. No big deal
- Highlight more important phrases in materials

….change from self or students

- Speak up/engage more
- I need to try and force myself to enjoy regulations
- Prepare more
- More of an all class community, groups are great but causes quite a division
- Better apply myself to absorb/learn the material
- A lot of work reading and preparing for the class

….change of particulars within the course itself

- I mean, more guest speakers and firsthand information are good
- More homework to have a more "guided study" for the course and to help improve overall grades
- Outlook of the lectures and more collaboration assignments
- Fewer paper handouts; more electronic
- Just an extra day or two on some sections
- Consolidation of materials
- Easier time finding specifics in documents
- I need to spend more time to familiarize myself with the material

4. ***Now, reflect on your career development. Where do you see yourself in 2023?***
16 of 16 students responded

- Airline pilot, this course is helping me understand the complexity of working for an air carrier.
- I see myself as a pilot with a regional carrier working towards getting into united. This course is laying the foundation for what I should expect in the industry.
- My goal is to be in operations at an airport or in operations risk/safety at an airline.
- Working at an airport engaging myself with all of this useful information.
- Flying for a carrier company, with the knowledge of the regulations and confidence.
- Airline management position: Absolutely moving toward the goal because I know everything I'm learning now I will need in the future.
- I see myself working for a major FBO, such as Signature, learning about the FBO business. This class has certainly helped, because the FARs are very important to know, in addition to working in groups.
- Yes this course is 100% moving me to my goal. One day I'd like to get out of flying and into management. This class has made me much more interested in management.
- I see myself at a regional air carrier as a new first officer. This class will definitely help me understand what to expect before getting there.
- Flying for a regional carrier in the United States, preparing myself to make the jump to a major i.e. Southwest, United, American. This course has made me far more self-aware of my record and how my actions reflect on my ability as a pilot.
- Working for an airline. This class is helping because it is teaching me the rules of the airlines.
- Airlines, this course is helping me become more aware of the industry I'm signing up for.
- First officer at a regional.
- I see myself employed at a 121 air carrier performing the duties of an aviation manager. Whatever they may be specifically.
- In a career with a regional airline/air national guard head of my own household. This class is relative to the first bit.
- Hopefully a pilot who has enough knowledge about the industry.

AABI Student Learning Outcome A: Apply Mathematics, Science and Applied Sciences to Aviation Related Disciplines

ASCI4022 – Jet flying techniques II

Description of Assignment: Final exam collated scores from select questions (shown in appendix).

Performance Indicator (Sample size = 12)	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations	Mean
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Principles of flight	16	67	17	71
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	As above				

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.

Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4022, a block of questions from the final comprehensive exam was taken to meet the two categories of this assessment rubric. There is significant overlap between the categories and the skills necessary to answer the questions with the block titled “principles of flight.” This block contained 17 questions which were aligned with the rubric as follows: where <11=NI, 11-14=ME, and >14=EE.

Recommendations

1. No change is recommended to this course that relates to this outcome.

AABI Student Learning Outcome B: Analyze and Interpret Data

ASCI4022 – Jet flying techniques II

Description of Assignment: Final exam collated scores from select questions.

Performance Indicator (Sample size = 12)	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations	Mean
Gather and document data	Mental maths	25	75		72
Analyze and interpret data	As above				
Report on findings and conclusions	As above				

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.

Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4022, a block of questions from the final comprehensive exam was taken to meet the two categories of this assessment rubric. There is significant overlap between the categories and the skills necessary to answer the questions with the block titled “mental maths.” This block contained 10 questions which were aligned with the rubric as follows: where <7=NI, 7-9=ME, and >9=EE.

Since this same exam format has been refined over the course of several years, no change is recommended. However, grades show that ¼ of the class had issues with basic interpretation and calculation questions related to professional practice. Since these skills are first introduced during the sophomore year, it is recommended that practice continue into the junior year.

Recommendations

1. No change is recommended to this course that relates to this outcome.
2. Mental maths for professional practice may be incorporated into ASCI3010 & 3020.

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

ASCI4022 – Jet flying techniques II

Description of Assignment: Final exam collated scores from select questions (shown in appendix).

Performance Indicator (Sample size = 12)	Questions, Problems, Etc.	% Needs Improvement	% Meets Expectations	% Exceeds Expectations	Mean
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Planning, operations, & procedures	50	50		62
Explain the use of specific techniques, skills and tools of modern aviation practice.	As above				
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	As above				
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	As above				

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.

Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4022, a block of questions from the final comprehensive exam was taken to meet the two categories of this assessment rubric. There is significant overlap between the categories and the skills necessary to answer the questions with the block titled "planning/operations/procedures." This block contained 15 questions which were aligned with the rubric as follows: where <10=NI, 10-13=ME, and >13=EE.

Since this same exam format has been refined over the course of several years, no change is recommended. However, grades show that 1/2 of the class had serious issues with specific questions pertaining to professional practice. However, grades from ASCI4023 in the simulator are markedly better. It is suggested that students accuracy in use of their skills is context specific.

Recommendations

1. No change is recommended to this course that relates to this outcome.
2. Monitor grades related to this outcome for ASCI4022 & 4023.

AABI Student Learning Outcome E: Communicate effectively using both Oral and Written Communication Skills

ASCI 4350 – Team resource management

Description of Assignment: Student group project paper and **poster project and senior design presentation**. The presentations are open to the public and graded by anyone who has reviewed the presentation.

Performance Indicator (Sample size = 2)	**Questions, Problems, Etc.**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**	**Mean**
Organization of material	Organization				
	Visuals				
Provide evidence to support claims or inform audience	Methods and Results				
	Overall Content Knowledge				
Demonstrate the proper use of language	Response to Questions				
	Mechanics				
Delivery of an oral presentation	Delivery				

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.

Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4350, a selection of categories from the graded evaluation of the final project poster presentations was taken to meet individual categories of this outcome. Two groups of students (total of 13) participated in both the SLU senior legacy symposium and the Parks senior design symposium. Presentation and poster grades were assigned by the course instructor, Parks faculty, and industry professionals by a survey administered by the Dean's office.

Recommendations

1. The survey used for ASCI4350 students will be redesigned to meet both the categories and levels of this outcome.

AABI Student Learning Outcome F: Engage in and Recognize the Need for Life-long Learning

ASCI 4350 – Team resource management

Description of Assignment: **Student group project paper** and poster project and senior design presentation. The presentations are open to the public and graded by anyone who has reviewed the presentation.

Performance Indicator (Sample size = 2)	**Questions, Problems, Etc.**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**	**Mean**
Use of Research to Explore a Topic	Problem significance or contribution			100	3.5
	Purpose statement		100		
Identification and Pursuit of Opportunities to Expand Knowledge, Skills and Abilities	Contribution			100	3.5
	Comprehensive sources		100		
Evaluates Quality of Opportunities and Resources to Expand Knowledge, Skills, and Abilities	Quality of sources		100		3.3
	Relevance of sources			100	
	Evidence of timely & seminal sources			100	
Applies Expanded Knowledge to Relevant Problems	Demonstrates an understanding of the aviation field			100	4
	Use of industry examples			100	
	Results and conclusions discussion			100	

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.
Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4350, a selection of categories from the evaluation of the final project written assignment was taken to meet individual categories of this outcome. The assessment is based off of the two papers submitted by the two teams completing the course.

Recommendations

1. The assignment rubric will be revised to match the three levels used by the performance indicator rubric.

AABI Student Learning Outcome C: Work Effectively on Multidisciplinary and Diverse Teams

ASCI 4350 – Team resource management

Description of Assignment: Student group project paper and **poster project and senior design presentation**. The presentations are open to the public and graded by anyone who has reviewed the presentation.

Performance Indicator (Sample size = 2)	**Questions, Problems, Etc.**	**% Needs Improvement**	**% Meets Expectations**	**% Exceeds Expectations**	**Mean**
Collaboration/Conflict management	Evidence of team work				
Communication	Delivery				
Decision-making	Uses techniques, skills, and modern engineering tools for design				

A copy of a student test representing the high score earned in this assignment can be found at the end of this performance rubric.

Summary

Given that this is the first time that this assessment tool has been used in this course, some questions were raised concerning implementation. The primary issues were that the assessment rubric only contained three levels and that the rubric categories had to be mapped to existing criteria.

In the context of ASCI4350, a selection of categories from the graded evaluation of the final project poster presentations was taken to meet individual categories of this outcome. Two groups of students (total of 13) participated in both the SLU senior legacy symposium and the Parks senior design symposium. Presentation and poster grades were assigned by the course instructor, Parks faculty, and industry professionals by a survey administered by the Dean's office.

Recommendations

1. The survey used for ASCI4350 students will be redesigned to meet both the categories and levels of this outcome.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 1150 - Flight 1 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 35

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 1 and 2 Stage Check Oral Exams	14%	86%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 1 and 2 Stage Check Oral Exams	14%	86%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 1 and 2 Stage Check Flight Exams	15%	85%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 1 and 2 Stage Check Flight Exams	15%	85%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 1150 - Flight 1 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 35

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 1 and 2 Stage Check Exams	15%	85%	---
Analyze and justify solutions to a problem.	Module 1 and 2 Stage Check Exams	15%	85%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module 1 and Module 2 Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 1550 - Flight 2 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 24

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 3 and 4 Stage Check Oral Exams	24%	76%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 3 and 4 Stage Check Oral Exams	24%	76%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 3 and 4 Stage Check Flight Exams	67%	33%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 3 and 4 Stage Check Flight Exams	67%	33%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. All stage check flight deficiencies that occurred were during the Private Pilot End-of-Course exam. Therefore, student and instructor training should be improved to better focus on tasks included in Module 3 (cross-country operations, short and soft field takeoffs and landings, and Private Pilot checkride flight preparation).

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 1550 - Flight 2 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 24

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 3 and 4 Stage Check Exams	42%	58%	---
Analyze and justify solutions to a problem.	Module 3 and 4 Stage Check Exams	42%	58%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. All stage check flight deficiencies that occurred were during the Private Pilot End-of-Course exam. Therefore, student and instructor training should be improved to better focus on tasks included in Module 3 (cross-country operations, short and soft field takeoffs and landings, and Private Pilot checkride flight preparation).

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 1560 - Flight 2 Transition Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 4

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 4 Stage Check Oral Exams	25%	75%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 4 Stage Check Oral Exams	25%	75%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 4 Stage Check Flight Exams	25%	75%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 4 Stage Check Flight Exams	25%	75%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 1560 - Flight 2 Transition Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 4

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 4 Stage Check Exams	25%	75%	---
Analyze and justify solutions to a problem.	Module 4 Stage Check Exams	25%	75%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 2150 – Flight 3 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 19

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 5 and 6 Stage Check Oral Exams	23%	77%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 5 and 6 Stage Check Oral Exams	23%	77%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 5 and 6 Stage Check Flight Exams	24%	76%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 5 and 6 Stage Check Flight Exams	24%	76%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 2150 – Flight 3 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 19

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 5 and 6 Stage Check Exams	24%	76%	---
Analyze and justify solutions to a problem.	Module 5 and 6 Stage Check Exams	24%	76%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 2550 – Flight 4 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 46

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 7 and 8 Stage Check Oral Exams	26%	73%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 7 and 8 Stage Check Oral Exams	26%	73%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 7 and 8 Stage Check Flight Exams	29%	71%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 7 and 8 Stage Check Flight Exams	29%	71%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 2550 – Flight 4 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 46

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 7 and 8 Stage Check Exams	28%	72%	---
Analyze and justify solutions to a problem.	Module 7 and 8 Stage Check Exams	28%	72%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome A: Apply Mathematics, Science and Applied Sciences to Aviation Related Disciplines

Course: FSCI 2650 Navigation Foundations Semester Taught: Spring 2018 Number of Students Scored: 20

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): Final Exam problems 12 & 20

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation (What knowledge is required?)	Does not understand the connections between the mathematic or scientific concept and the problem.	Identifies key mathematical or scientific concept applicable to the problem.	Identifies the relevant facts of the mathematical or scientific concepts for the given problem.
Apply specific facts of mathematics, science, and applied science needed for a given situation (What application is required?)	Significant gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed incorrectly.	Minor gaps in the application of the mathematic or scientific concept; calculations used to determine a solution to the problem are performed correctly.	Correctly applies the relevant facts of the mathematic or scientific concepts to the problem.

(rev. 10/11/2017)

Description of Assessment: Student assessment consisted of homework assignments, quizzes, and exams. Students were expected to answer multiple choice and fill-in-the-blank questions to identify and apply facts of mathematics and science.

Performance Indicator	Section of Student Work	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify specific facts of mathematics, science, and applied science needed for a given situation.	Final Exam Problem 20	15	85	--
Apply specific facts of mathematics, science, and applied science needed for a given situation.	Final Exam Problem 12	40	60	--

Recommendations: Spend more time instructing on the practical application of mathematic principles regarding flight planning.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 2650 Navigation Foundations Semester Taught: Spring 2018 Number of Students Scored: 20

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): Homework 1 Problems 7, 9, 24, 25

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

(rev. 10/18/2017)

Description of Assessment: Student assessment consisted of homework assignments, quizzes, and exams. Students were expected to answer multiple choice and fill-in-the-blank questions to identify and apply modern techniques and skills of aviation practice with the aid of an analog calculating device.

Performance Indicator	Section of Student Work	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills, and tools of modern aviation practice for a given situation.	Homework 1 Problem 24	20	80	--
Explain the use of specific techniques, skills, and tools of modern aviation practice.	Homework 1 Problem 7	55	45	--
Apply the chosen techniques, skills, and tools of modern aviation practice to the given situation.	Homework 1 Problem 9	60	40	--
Reflect on the choice of techniques, skills, and tools of modern aviation practice applied to the given situation.	Homework 1 Problem 25	15	85	--

Recommendations: Provide more in-depth instruction on the computation of antipodal latitude/longitude coordinates, great circle vertices, and changes in position from a given latitude/longitude coordinate. Require students to provide documented explanations of their techniques when calculating solutions.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 3550 – Flight 5 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 44

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Module 9 and 10 Stage Check Oral Exams	14%	86%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Module 9 and 10 Stage Check Oral Exams	14%	86%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Module 9 and 10 Stage Check Flight Exams	53%	47%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Module 9 and 10 Stage Check Flight Exams	53%	47%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. Deficiencies occurred during the Commercial Airplane Single-Engine and Multi-Engine End-of Course Flight Checks. Therefore, student and instructor training and syllabus revisions should better incorporate Commercial Pilot procedures and maneuvers as well as Multi-Engine emergency procedures.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 3550 – Flight 5 Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 44

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Module 9 and 10 Stage Check Exams	33%	67%	---
Analyze and justify solutions to a problem.	Module 9 and 10 Stage Check Exams	33%	67%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations. Deficiencies occurred during the Commercial Airplane Single-Engine and Multi-Engine End-of Course Flight Checks. Therefore, student and instructor training and syllabus revisions should better incorporate Commercial Pilot procedures and maneuvers as well as Multi-Engine emergency procedures.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: **FSCI 3700 Principles of Flight Instruction I** Semester Taught: **Spring 2018** Number of Students Scored: **4**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Term Paper**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Ident f es a sma subset of necessary techn ques, sk s, and too s; dent f es unre ated techn ques, sk s, and too s.	Ident f es a most a of the re evant techn ques, sk s, and too s; m ss ng some m nor techn ques, sk s, and too s.	Ident f es a re evant techn ques, sk s, and too s; does not nc ude unre ated techn ques, sk s, and too s.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Prov des tt e exp anat on of how the techn ques, sk s, and too s shou d be used; prov des ncorrect exp anat on of how to use techn ques, sk s, and too s.	Exp a ns how a most a of the techn ques, sk s, and too s shou d be used; shows adequate understand ng of techn ques, sk s, and too s; m ss ng the exp anat on of some m nor techn ques, sk s, and too s.	Exp a ns how a re evant techn ques, sk s, and too s shou d be used; shows n-depth understand ng of techn ques, sk s, and too s; does not exp a n unre ated aspects of techn ques, sk s, and too s.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	App es a sma subset of the necessary techn ques, sk s, and too s; ncorrect y app es the techn ques, sk s, and too s.	Correct y app es a most a of the techn ques, sk s, and too s; demonstrates adequate use of techn ques, sk s, and too s; ncorrect y app es some m nor techn ques, sk s, and too s.	Correct y app es a re evant techn ques, sk s, and too s; demonstrates mastery of techn ques, sk s, and too s; does not app y unnecessary techn ques, sk s, and too s.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Prov des tt e ev dence of ref ect on; ncorrect y attr butes success or fa ure to certa n techn ques, sk s, and too s.	Ref ects proper y on a most a of the techn ques, sk s, and too s; proposes some mprovements or just f es proper y the use of some techn ques, sk s, and too s; ref ects mproper y on some m nor techn ques, sk s, and too s.	Ref ects proper y on a re evant techn ques, sk s, and too s; proposes severa mprovements or just f es proper y the use of a techn ques, sk s, and too s; does not ref ect on rre evant techn ques, sk s, and too s.

(rev. 10/18/2017)

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: **FSCI 3700 Principles of Flight Instruction I** Semester Taught: **Spring 2018** Number of Students Scored: **4**

Type of Student Work Used for Assessment* (e.g. Homework #4; Exam #2 problem 3; final project): **Term Paper**

**Attach description of assignment used for assessment and samples of student work.*

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak prob em formu at on; some ssues/var ab es dent f ed, but many m ss ng; many cr ter a m ss ng; many constra nts m ss ng; many assumpt ons m ss ng.	Adequate prob em formu at on; most key ssues/var ab es are dent f ed; a most a cr ter a presented for rank ng a ternat ves; A most a constra nts dent f ed; a most a assumpt ons dent f ed.	Comp ete and succ nct prob em formu at on; key ssues/var ab es dent f ed; a re evant cr ter a presented for rank ng a ternat ves; a re evant constra nts dent f ed; a re evant assumpt ons dent f ed.
Analyze and justify solutions to a problem.	L m ted ana ys s of a ternat ves; on y some cr ter a eva uated; on y some constra nts cons dered; weak d scuss on of ana ys s resu ts; m ss ng s gn f cant steps n dec s on mak ng process; weak just f cat on for f na so ut on.	Appropr ate ana ys s approach; most y correct ana ys s resu ts; cr ter a eva uated w th m nor errors; constra nts cons dered w th m nor errors; adequate d scuss on of ana ys s resu ts; document dec s on mak ng process.	We thought out or c ever ana ys s approach; comp ete and correct ana ys s resu ts; comp ete cons derat on of constra nts; deta ed d scuss on of ana ys s resu ts; deta ed documentat on of dec s on mak ng process

(rev. 11/01/2017)

What Factors Motivate Students to Learn?

[redacted]

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Introduction

Helping students learn is one of the primary responsibilities of a flight instructor. Ensuring students maintain a high level of motivation makes the learning process more efficient and enjoyable for the student and instructor, and they play an important role in helping students learn. Determining the factors that motivate each student will have a positive impact on training progress, but there are several common errors instructors make about their student's motivation that can inhibit learning. One of the main errors is assuming the student is motivated the same way as the instructor. This can cause high levels of frustration that act as a barrier to the accumulation of knowledge and skill. Understanding common misconceptions about motivation can be extremely beneficial to instruction and reception of information. Knowing strategies to improve motivation is a key aspect in student instruction. Motivated students are better equipped to digest new information in an effective manner. To get a better understanding of the factors that affect motivation, the instructor must first understand the role of motivation in the learning process.

What is Motivation?

Motivation is defined as the reason for people's actions, desires, and needs (Motivation, 2018). In other words, people do not do things without some type of motivation. Students will not accomplish anything without a strong motivation to perform, learn, or achieve a goal. Before discussing how to motivate students, it is important to understand the types of motivation.

Extrinsic motivation occurs when we engage in an activity to earn a reward or avoid punishment. This type of motivation involves external goals or externally imposed constraints. Examples of extrinsic motivation include studying to earn a grade, playing a sport to win, or cleaning your room to avoid punishment. These motivations, while effective, do not produce the

best or most motivated students. Extrinsic motivation relies on external factors which determine the level of motivation. The student is not self-motivated, and as soon as the external factors are gone, the student will lose motivation (Hennessey, Moran, Altringer, & Amabile, 2005). Motivation that comes from the individual is more desirable in the learning environment than extrinsic motivators.

Intrinsic motivation is a more authentic form of motivation because it originates from within the individual. This type of motivation is not developed by placing external constraints or expectations on a student; it comes from the student's desire to do something for its own sake or for sheer enjoyment of a task. This type of motivation is more effective because it involves feelings of self-determination and satisfaction in performing a task. Students that are intrinsically motivated will learn for the sake of learning rather than to achieve some specific reward. Examples of intrinsic motivations are participating in a sport because it is enjoyable or flying an airplane because it is your passion. These types of motivations are longer lasting because they come from the individuals desire to perform the task for the sake of the task. In other words, the behavior itself is its own reward (Hennessey, 2005).

The environment in which a student learns can dramatically affect the role of extrinsic and intrinsic motivations. "Environmental constraints such as the imposition of time limits, an expected reward, or an impending evaluation can undermine feelings of self-determination engendering an extrinsic orientation. However, under some circumstances, certain forms of reward may enhance intrinsic motivation through a process of motivational synergy. Intrinsic motivation has been linked to creativity of performance, longer-lasting learning, and perseverance" (Hennessey, 2005). The motivation of a student may be fragile, and the environment in which they learn has a strong impact. "From a student's point of view, this

environment can be perceived along continuum from supportive to unsupportive… the complex dynamics of the classroom, its tone, the interpersonal forces at play, and the nature and structure of communication patterns all combine to either support or inhibit the student's motivation to pursue a goal (Ford, 1992). The motivation of a student can change dramatically based on the environment they are in. A supportive environment in which a student feels comfortable to ask questions is much more conducive to effective motivation. A student who sees value in learning and is in a supportive environment will become motivated. If the same student is not in a supportive environment, they will become defiant and frustrated (Ambrose, Lovett, Bridges, DiPietro, & Norman, 2010). After discussing the types of motivation and determining how the learning environment plays a role, it will be easier to understand the key concepts of motivation.

Central Concepts in Understanding Motivation

"Motivation refers to the personal investment that an individual has in reaching a desired state or outcome which influences the direction, intensity, persistence, and quality of the learning behaviors in which students engage" (Maehr & Meyer, 1997). The principle at work here is defined as "students' motivation generates, directs, and sustains what they do to learn" (Ambrose, 2010). Motivation guides our behavior and determines what and how we will accomplish tasks. If students do not find the content relevant or meaningful, they will see no value in mastering it. Also, if students believe they will fail no matter how hard they try, they will lose motivation because they believe their effort is futile. Two concepts that are central to understanding motivation: the subjective value of a goal and the expectancies, or expectations for successful attainment of that goal (Atkinson, 1957). Before discussing value and expectancy, there must be a discussion of goals.

Goals act as a guide that direct our behavior to achieve a specific purpose. It is important to understand that the goals an instructor has for a student may be completely different than the student's goal. If the instructor's goal for the student is to get a high grade in the class and the student merely wants to pass, there will be a discontinuity between the instructor's and the student's expectations. This confusion or misunderstanding can lead to a toxic and ineffective learning environment. To avoid this confusion, it is helpful to understand the different types of goals and how they will play a role in the student's motivation.

"Performance goals involve protecting a desired self-image and projecting a positive reputation and public persona" (Ambrose, 2010). Performance goals are concerned more with the result of a task rather than the task itself. When students strive for these goals, they are concerned with certain standards to prove their competence to get some form of praise or recognition. This develops into extrinsic motivation where the student requires external influences to be motivated.

Learning goals lead students to gain proficiency or competence in what the task can teach them. This type of goal can lead to a more effective intrinsic motivation. The student strives to achieve a deep understanding of the concepts. "If we want our students to gain the deep understanding that comes from exploration and intellectual risk taking (a learning goal) but they want only to do what is necessary to get a good grade (a performance goal), we may not obtain the kinds of learning behaviors and outcomes we desire" (Ambrose, 2010). Learning goals will lead to more persistent attitudes and motivations.

Work-avoidant goals can lead to conflict between an instructor and a student. These students will show little motivation; they will put in as little effort as possible, and they will appear disinterested or disengaged. Finishing assignments quickly can be a sign of work-

avoidant goals because the student just wants to finish a task rather than do it well. This type of goal is undesirable, but luckily it is usually specific to the context or content. A student could be sufficiently motivated in one subject and avoid work in a different subject.

Other types of goals include affective and social goals. Affective goals relate to feelings and emotions. This type of goal would be associated with a stimulating or satisfying task. Intrinsic motivation is characteristic of this type of goal because the desire to perform a task comes from within the individual. Social goals also play an important role in motivation. Goals related to achieved positive social interactions or making friends are defined as social goals.

The more goals that an activity accomplishes the more motivated the student will be to pursue the activity. For example, if performing a task satisfies social, affective, and learning goals, the student will be more inclined to perform the task more effectively and with greater persistence. A student with a multitude of goals is more likely to achieve greater success. On the contrary, goals may be conflicting. This phenomenon can hinder the learning process if the student does not manage their goals the proper way. After briefly discussing a few types of goals, it is important to determine the value of the goals.

A goal is meaningless to a student if he sees no value in pursuing it. "A goal's importance, often referred to as its subjective value, is one of the key features influencing the motivation to pursue it" (Ambrose, 2010). In other words, the goal must have significance in the eyes of the student, or they will have no reason to perform the task. The value of a goal may stem from a variety of sources which are classified under three main categories. These include attainment value, intrinsic value, and instrumental value.

Attainment value occurs when the student achieves satisfaction from mastery or accomplishment. This type of goal is very common in the aviation industry. Pilots tend to be

goal-oriented when it comes to accomplishing all the requirements for a specific certificate. Many aviation students will use the attainment value of a goal to help motivate them to study or train.

Another source of value is intrinsic value. This is like intrinsic motivation because the student finds value in performing the task itself, not the result. Aviation students will likely experience this type of value. A student who enjoys flying will apply this source of value to their goals. These types of students are ideal because they are getting into aviation for the right reason. If they can achieve satisfaction throughout their training, they will learn more efficiently, and it will be a more enjoyable experience for the instructor and the student.

The last source of value is described as instrumental value. This type of value relates to the degree of which the goal helps one to accomplish more goals. Student pilots will experience this type of value as well. Ultimately, aviation students train to become successful in the industry and hopefully receive a salary. The goals of getting a private pilot certificate, instrument rating, commercial certificate, flight instructor certificate, or an airline transport pilot certificate will have instrumental value to the student because each of these goals is necessary to have success in the industry.

Goals are more likely to be accomplished if they are associated with a higher value. Students' motivation to accomplish a goal will be much stronger if they can apply more than one source of value to the goal. In aviation, a student will become familiar with these sources of value even if they do not realize it. Goals and values, while necessary for motivation, are not enough to be properly motivated. A student must believe that the goal is attainable.

The expectancy of the student is the final key concept in understanding motivation. The main idea of this concept is that the student must believe that the goal is achievable. If a student

thinks a goal is beyond reach, there is no reason for them to put forth any effort. For new pilots, the instructor must instill some amount of confidence in the student. Students need to believe that they have what it takes to become a safe and successful pilot. Some students will already have the confidence necessary to be motivated, but others may need some help from the instructor. To do this, the instructor should give positive feedback as well as negative feedback. The instructor should also be professional and enthusiastic, so the student will have a more positive and confident attitude. After reviewing the key concepts required for motivation, an instructor should learn strategies to establish these concepts.

Strategies to Establish Key Concepts

Strategies to establish value include connecting the material to students' interests, provide authentic, real-world tasks, show relevance to students' current academic lives, demonstrate the relevance of higher-level skills to students' future professional lives, identify and reward what you value, and show your own passion and enthusiasm for the discipline (Ambrose, 2010). This research is incredibly valuable to the flight instructor because it can make the training course much easier to accomplish. Instructors who practice these strategies, or at least aware of them, will have better success with unmotivated students. This paper will now analyze how each of these strategies of establishing value apply to aviation training.

The first strategy to establish value involves connecting the material to the student's interests. "Students are typically more motivated to engage with material that interests them or has relevance for important aspects of their lives" (Ambrose, 2010). In aviation, and most other industries, some subjects or concepts may not be interesting to the student. Early in a student's training, there will likely be more ground lessons than flight lessons to develop a base level of knowledge. This is common in most aviation training curriculums. One drawback of this strategy

is that it can lead to a student losing interest in the subject because they are not applying what they are learning. It is imperative that the instructor explain the meaning or relevance behind each lesson before beginning the lesson. For example, if an instructor is teaching a lesson on regulations, the student may lack interest before beginning the lesson. Before going straight into reading off regulations that may be applicable to the student, the instructor should explain why the lesson is necessary for training. The instructor may explain that regulations are put in place to keep everyone in the industry and the public safe, or the instructor may mention how and why certain regulations came into existence and why we follow them. By giving the student a reason to learn the material and connecting it to their interests, the instructor can mold a more motivated student.

Another strategy to establish value is providing authentic, real-world tasks. This strategy is used often in aviation settings. Many of the maneuvers pilots will practice may seem unnecessary by themselves. It is important for a student to understand why they are performing each maneuver. For example, if a student believes that practicing power on stall is not an important skill, they may be less inclined to become proficient in the maneuver. In this scenario, it is important for the flight instructor to explain to the student that the reason for practicing the maneuver is to train the pilot to quickly recover from a stall immediately after takeoff. While the task on its own may not seem authentic, it is necessary that the student be able to correlate the maneuver to the actual scenario it may be experienced in. By doing this, the student will realize the importance of each task or material, and they will be more motivated.

Showing relevance to students' current academic lives is another strategy used to establish value. This strategy is like the strategies previously discussed. Students will not typically enjoy learning and training when they believe it is not relevant. These students need to

be provided with a reason for learning the material. An example of this, may involve a student who is bored with their current training lesson, and they want to move on to cross country flights. The instructor should stress that the basics of training must be accomplished before attempting more complex tasks. Once the student understands the relevance, they will become more motivated and less frustrated when it comes to preforming the task.

Demonstrating the relevance of higher –level skills to students' future professional lives is an effective strategy to establish value. Often in aviation training, students will focus too much on the task or content at hand. If students are fixated on accomplishing one task at a time and moving on to the next without truly understanding the previous task, they will not sufficiently learn the material. A student pilot who falls into this behavior will see each task as a checklist item. They will simply complete the task and not think about it again until they are required to perform it. An instructor who notices this behavior should promptly correct it. The instructor should explain to the student that they must develop a solid foundation that will stay with them for their entire career. Students must realize that every aspect of training is there for a reason, and having strong foundational skills and knowledge will lead to a much safer and more successful pilot.

The next strategy this paper will discuss is identifying what you value. The student needs to understand what is expected of them and what you value as an aviation instructor. "This can be done in the syllabus, through feedback, and through modeling" (Ambrose, 2010). In aviation, the student will be provided with some guidelines on how to progress through the curriculum. Typically, this will be accomplished through a syllabus or training course outline; however, if the training lacks a specific set of guidelines, the student should still be aware of the requirements outlined by the Federal Aviation Administration for each certificate, rating, or endorsement. In

addition to these guidelines, the instructor should always provide constructive feedback to the student after every lesson. Instructors should ensure their students know how they are doing and what they need to work on. When students do not believe their effort is being recognized or praised, they will quickly lose focus, motivation, and enthusiasm.

The final strategy for establishing value in a student involves showing your own passion and enthusiasm for the discipline. Having a positive and enthusiastic attitude is contagious. It is human nature to mirror others' actions and attitudes, so if an instructor is passionate and enthusiastic, the student is more likely to be. An instructor with a bad attitude will discourage the student from being proactive because the student will feel like they are a nuisance to the instructor. This type of training environment is toxic and will ultimately lead to insufficient training.

Strategies that Help Students Build Positive Expectancies

In addition to the strategies that establish value, there are strategies that an instructor can practice to help students build positive expectancies. These strategies include ensuring alignment of objectives, assessments, and instructional strategies, identify an appropriate level of challenge, provide early success opportunities, articulate your expectations, provide rubrics, provide targeted feedback, and be fair (Ambrose, 2010). Practicing these strategies will lead to a more constructive learning environment. The strategies listed above can have a strong impact on the motivation of a student.

The first strategy mentioned to help students build positive expectancies is to ensure alignment of objectives, assessments, and instructional strategies. At the beginning of a student pilot's training, they should be introduced to the objectives. This will provide them with a framework of the course, and it will act as a guide for their training. Providing the student with

fair and constructive feedback will also build positive expectancies because the student will know how they are progressing through the course. The student pilot who has a strong understanding of what is expected of them will be more likely to succeed. They will feel like they are more in control of their learning.

Identifying an appropriate level of challenge is another effective strategy to build positive expectancies. It is critical that a flight instructor not overwhelm the student with unrealistic goals. This will confuse the student and lead to frustration. It is important that the instructor consider the student's background and experience level when giving them challenges and assessments. This may be more difficult when giving a lesson to a student for the first time. In this situation, it may be helpful to consult with colleagues about the student's progress and experience. It may also be beneficial to give them an assessment to determine their background and level of experience.

Another strategy for building strong expectancies involves providing early success opportunities. Giving students the opportunity for small victories early in their training can improve their performance later. Once students have a small taste of success, they will be more likely to continue to pursue it. In a high-risk environment like aviation, this is especially important. If the student only measures success by the result or goal, the training process may become exhausting. It is the job of the instructor to ensure the student is provided with opportunities to perform well.

Articulating expectations, providing rubrics, and targeted and fair feedback will also help students gain a better expectancy of their training. These strategies provide the student with a clear understanding of what lies ahead for them. Identifying the goals and objectives is necessary for students to know what they need to accomplish. Providing rubrics will provide them with the

way they will accomplish the objectives and goals, and giving positive and fair feedback, will guide their progress through the course. Student pilots should never question how they are progressing through a training course. This reflects poor instructional practices, and it will result in slower more choppy training.

In addition to strategies that build positive expectancy, there are strategies that address value and expectancies simultaneously. These strategies include providing flexibility and control and giving students an opportunity to reflect. Giving students options in their training can show the student that the instructor is willing to tailor to the needs of the individual. Not all students are the same, and they should be treated as individuals. This will minimize the student's feelings of insignificance, and it provides them with a sense of control over their training. In aviation, the instructor can offer a ground, sim or flight lesson on any given day. It is important that the instructor consider the needs of the student when choosing which type of lesson. Giving students the opportunity to reflect can help them generate questions and develop a deeper understanding of the material. A flight instructor who is aware of and practices some or all the strategies will be better equipped to handle a diverse range of students. These strategies help the flight instructor tailor their instruction to the individual, and they can improve students' motivation.

Conclusion

This research has identified how motivation is defined and the role it plays in the aviation training environment. Motivation is the driving force behind every successful pilot. It is imperative to the learning process, and it is important that instructors understand the common strategies used to improve motivation. By looking at common examples in the aviation environment, it is easier to see how an instructor can implement these strategies to improve the training and learning process.

References

Ambrose, S. A., Lovett, M., Bridges, M. W., DiPietro, M., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*.

Atkinson, J.W. (1957). Motivational determinants of risk taking behavior. *Psychological Review.*

Ford, M.E. (1992). *Motivating humans: Goals, emotions and personal agency beliefs.* Newbury Park, CA: Sage Publications, Inc.

Hennessey, B., Moran, S., Altringer, B., & Amabile, T. M. (2005). Extrinsic and intrinsic motivation. *Wiley encyclopedia of management*.

Maehr, M., &Meyer, H. (1997). Understanding motivation and schooling: Where we've been, where we are, and where we need to go. *Educational Psychology Review,* 9, 371-409.

Motivation [Def. 1]. (n.d.). *Merriam Webster Online*, Retrieved April 30, 2018, from https://www.merriam-webster.com/dictionary/motivation

Wigfield, A., & Eccles, K. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review.*

How Climate Affects Learning

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Principles of Flight Instruction I

FSCI 3700

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How Climate Affects Learning

Chapter six in "How Learning Works" addresses the importance of creating a climate that allows students to flourish emotionally and intellectually. Although it focuses on the traditional college age students, 18-22-year old's, the point of creating a good learning environment is applicable to all age levels. The reader is walked through previous research, a background of how students develop, the implications of creating a poor or marginal climate, and finally how to create a good learning environment. Having a better understanding of what generates a bad climate, and how it negatively impacts learning better equips an instructor to avoid these areas or help a student to work through them. Ultimately, the more enjoyable learning is the quicker and more motivated they'll be able to do. In addition, the instructor will reduce their own work load, because as the learning process becomes more productive so does teaching.

The chapter starts with two examples of how quickly a climate can change, or how an instructor may be contributing to a problem their trying to correct. In both examples, the climate changed for the worse and created a road block for learning. Neither professor understood were there students were at socially or emotionally. Professor Battaglia causes a chaotic situation by introducing a politically charged topic, not realizing the students weren't intellectually mature enough to have a calm conversation about. Professor Guttman upset both men and women, because he didn't fully understand the consequences of his actions. Even though he thought he was making the learning environment more attractive for women, he gave the men the impression he was going easy on them because they were female. In addition, he didn't set the correct tone for the TA early in the semester.

From these stories a new flight instructor can understand how volatile the learning environment is. Neither professor wanted a toxic climate but their actions, or lack thereof,

created one. These stories stress the importance of creating a good learning environment from the beginning of the course. Trying to correct a mistake is always more difficult than doing it correctly the first time. New flight students are trying to learn to fly an aircraft. Therefore, the politically sensitive topics should not be brought up. If an instructor speaks about their views, and they're different from the student, the student may feel intimidated or get emotionally upset. Both will cause the learning process to slow down or stop since they are now focused on the instructors commit and not the lesson. In the second scenario, a new flight instructor can see the importance of creating a non-discriminator climate from the start, and don't show leniency to one group of students. The professor should have given the TA a stern warning when he belittled the students the first time, and not wait until someone filed a complaint. By allowing the TA to make several commits he had already created a toxic learning environment for the female students. In addition, by not calling on the female students during class he inadvertently gave the male students the impression that he favored the females. Although it's important to understand how a student learns, an instructor must have the same expectations for everyone. Favoring one group or person is setting them up for failure in the future, because they'll be expected to perform at the same level as everyone else at some point. Also, holding others to higher expectations creates enmity. When students become focused on why the instructor is holding others to a different standard, they aren't absorbing the information being taught.

The chapter sites several studies which point out that student development and climate are tightly intertwined and have a strong impact on learning. Many college students are living on their own for the first time and being held accountable for their own actions. This forces many to mature emotionally, socially, and intellectually over a brief period. Growing in these areas doesn't always happening equally, or in the direction a student or instructor wants. For example,

a death in the family or ending a relationship may cause social development to stop or move in a different direction. Knowing this gives instructors the ability to shape the classroom in a positive way, because this can energize the learning process (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010, p. 157).

The Chickering Model of Student Development tries to account for a range of factors affecting a student's development. The reader can think of each factor as a vector. Each vector applies a force, and the sum of these strongly influences the direction of the development. If the classroom environment allows these seven areas to develop it will have a positive impact their ability to learn. It's also important to note these areas are broad and can't always be controlled by the instructor. A college student develops these from their multiple experiences, not just from the ones in the classroom.

They are:

1. Developing Competence – By becoming competent intellectually, physically, and interpersonally the student realizes they are now responsible for themselves. They are making their own decisions and relying less on their parents.
2. Managing Emotions – A student can express themselves appropriately and listen to others.
3. Developing Autonomy - The process of freeing oneself from parental approval and developing their own autonomy.
4. Establishing Identity – This builds on the previous factors and allows a student to feel comfortable in "their own skin". Their level of confidence increases, prevent an outside influence from changing their opinion.
5. Freeing Interpersonal Relationships – Capable of having a mature relationship with people that have different opinions.
6. Developing Purpose – Realizing what you want to be and work towards that goal.
7. Developing Integrity – Having consistent values that guide and direct a student through life.

(Chickering, 1969)

Flight instructors can, however, remove many road blocks they have control over by creating a climate that will allow students to develop quickly and in the right direction. This is because flight students have a unique classroom, it's one-on-one instruction in an actual aircraft. Because, student pilots are immediately making their own decisions and seeing the results instructors need to create a climate that encourages "Establishing Identity". Since most college students have never been in a cockpit, patience and allowing them to make decisions will help foster a good learning environment. Even though these decisions could be wrong, they need to make them and see the consequences. Through a process of elimination, studying, and proper instruction they'll likely get to the right decision. As they start to make correct decisions on a regular basis their confidence builds, and so will the areas in the Chickering Model.

Positive reinforcement and constructive criticism are additional techniques instructors can use to enhance the development of their students. Once they're making good decisions an instructor should give a lot of praise, especially early in their training. A climate that is too critical can cause a student to stop making decisions for fear they're always wrong. Once this happens the vectors in the Chickering Model will slow, and so will learning. Giving praise to even the smallest accomplishments will help improve a student's self-imagine. In a classroom environment praise should be distributed equally. Only praising the "star student" or a certain group can cause the same problem that Professor Guttman had. The same is true when correcting.

Criticism should only be done in a constructive matter. Tell the student what they did wrong and offer suggestions to correct it. Always do it in a hopeful tone, so they feel positive about their ability to correct their mistake. Since managing emotions is critical for student development, an instructor should lead by example. Tell a student "you sucked at everything"

will hurt their ability to develop interpersonal relationships and personal autonomy. With these important building blocks missing in they'll struggle to establish an identity, possibly causing a sense of hopelessness. To avoid this, instructors can combine criticism with praise. For example, "During slow flight you wondered 20 degrees off your heading. I know this is something you'll be able to correct quickly, because you nailed the rest of your maneuvers." This leaves the student with a more positive approach to their ability to correct the problem and keeps the climate intact.

To use positive reinforcement and constructive criticism correctly and instructor needs to understand how the student learns. Marcia Baxter addresses the importance of this in her book "Knowing and reasoning in college: Gender- related patterns in students' intellectual development." Although she mainly addresses the difference between genders, the overall concept can apply to everyone. Sex isn't the only difference that influences how a person learns. Age, social status, cultural upbringing, and past experiences also impact learning. In addition, some learn better by reading then doing, while others are the opposite. An instructor won't be able to identify what works best immediately but needs to be aware that their teaching method could be a road block to learning. To ensure a student's success the best course of action may be to assign them to an instructor who's teaching method better aligns with how they learns. If this does happen, the student needs to be fulling aware it's not their fault and they won't looked down upon by others. Feeling socially accepted is important to intellectual growth.

Societal issues can be complicated and evoke strong emotions. A flight instructor can't control these outside the cockpit but can during a lesson. Students need to feel they're not being judged or excluded because of their social opinions. If a student feels they're being judged on these issues, and not performance, their ability to learn will be severely handicapped. For

example, if a female student feels her male instructor is sexist she'll focus more on social issue than the lesson being taught. Her self-esteem may decline, or she may become angry and stop listening to anything the instructor talks about. It might cause her to quite aviation all together because she'll never feel her input will be valued. If a student starts to talk about various social issues the instructor should remind them of the objectives in the lesson and what needs to be done to meet them. Creating a climate that is based on performance, not stereotypes, will help the student to channel their time and energy to the lesson and not to distractions.

Stereotypes can be a recipe for a toxic learning environment. Assuming a person can't perform a task based on age, race, sex, religion, or any other social issue will create tension and negative emotions. Steele and Aronson confirmed that it can lead to low self-esteem and cause students to focus on their anger instead of their lesson (Steele & Aronson, 1995). This chapter points out there are many times an instructor can create a stereotype even with good intentions by using tokenism. Professor Guttman did this by not calling on the female students in his class. His intentions were good, but the male students felt the female students were receiving special treatment. It's vital that a flight instructor treat all students equally. Allowing a student to pass that hasn't met the objectives can be as detrimental as not allowing them to pass when they have met them. Establishing a tone that everyone will be held to the same standards will allow students to focus on their objectives.

To help accelerate the learning process it's critical students feel comfortable discussing their mistakes or weaknesses. Establishing the correct tone will help the student feel they're not being judged when they don't understand a task or theory. Seymour and Hewitt found that "sarcasm, denigration, and ridicule by faculty were some of the reasons" students found leave their area of study (Ambrose et al, 2010). In the second story the TA used a tone that belittled

the female students, which prevents them from approaching the TA with questions. Students don't want their instructors to think less of them. Evan if they hear their instructor belittle another student they'll be less likely to say they're struggling with the same task. The results of this can be deadly in an aircraft. For example, a student might struggle with cross wind landings, and don't feel comfortable asking the instructor for additional help because of commits they heard. If they end up in a situation with strong cross winds, they could have an accident. It's important that flight instructors let students know they're not the only ones needing extra help. Establishing a non-judgmental tone will assist in this.

The topics discussed so far all involve the interaction between a student and instructor. As mentioned before, because flight instruction is one-on-one, these interactions have a greater impact on the students' performance. Every interaction leaves an impression. If this impression is positive their ability to learn, retain, and desire further education increases. However, if it's negative they'll stop caring and possibly quit. Continually emphasizing the positives of aviation, areas of performance they excel at, making yourself available for concerns or questions, and treat a them as a person will help to create an impression that an instructor genuinely cares about their success. Leaving an impression that the instructor doesn't care can cause a student to believe they're not good enough.

The content of the course can create an impression too, because students come from various backgrounds and experiences. This content, or the lack of, can impact a student's feeling of belonging. Omitting the contributions women and minorities made to aviation can cause students to feel there's an underlying tone. Evan if these contributions are discussed but done so in a light-hearted manner a student could feel it's being discussed because it has to be, not because the instructor wants to.

There are many variables that impact the learning environment. Some of these are outside an instructors control. For example, a death in the family or ending a relationship. However, there are still things instructors can do to help a student learn effectively and promote a positive climate.

For a student to develop intellectually they need to be allowed to explore areas of the unknown without punishment or prosecution. Encouraging critical thinking will help achieve this and is an asset in aviation. There are answers that are definite, but there are also many that aren't. In aviation, and life, there are situations that have more than one right answer. For example, which field is the safest to land after losing the engine? This question appears to be simple until you apply all the variables. The moisture of the ground, wind, power lines, aircraft performance, and type of crops that are planted must be considered. Encouraging open discussion without the student feeling they'll be judged will enhance their thinking of these situations.

As students talk opening about what to do in an emergency they'll quickly learn there isn't a single right answer, because every situation is different. However, open dialogue will bring scenarios to light that they never thought of. Encouraging them to argue an opposite position to gain new insight into old problems is also useful. This philosophical approach is used to inspire critical thinking and help realize there isn't a perfect answer. The same method, in addition with rubrics, can be used so students understand the importance of using evidence to support their decisions. Letting peers constructively critique their work exposes any "holes" they may have and prevents them from thinking the instructor is singling their work out.

Instructors should start with no assumption about their students. These can lead to over or under teaching a topic. For example, if an instructor thinks females struggle with math they

may insult them by sending too much time on it or starting at a basic level, which can insult them. No one expects an instructor to have prior knowledge of their student's strengths and weakness, but they should be constantly evaluating these areas, so they can be discovered quickly. The sooner an instructor learns their student, the quicker they can cater their instruction to them.

Customizing a teaching style to a student will help reduce anonymity. When a student feels more than just another number they'll care more about what they're learning. In addition, don't ask people to represent an entire group. Minorities and women can feel out of place already. Making them feel they're the "token" person of there group causes them to feel less like an individual and creates negative emotions. This includes the avoidance of using masculine pronouns, idioms, or slang. If an American idiom is used explaining it will help foreign students to feel more inclusive.

In creating a syllabus use language that stresses the importance of being inclusive and restful to others. Enforcing this from the first day will set the tone and help prevent negative feelings from building up. The content should not marginalize students or make them feel non-inclusive. An instructor should also realize it can be flexible to meet their needs. The syllabus is usual a students first impression of the course climate. Using this as a tool to engage them and set expectations can make a great first impression.

Throughout the course an instructor needs to be receptive of feedback. It can be very subtle or direct, but there should be a process for it. Doing this during the course will allow an instructor to quickly identify and resolve a toxic learning environment, or address any tensions that might be rising. Also, be prepared for the "hot topics" students may bring up, and address issues quickly before things get out of control.

This chapter addresses the importance of a good learning climate, and how to establish and maintain one. Taking all the fore mentions issues into consideration when creating a lesson will help an instructor to be prepared for various situations. Most people have been in both types of climates and can understand how difficult it was to learn in a toxic one. However, it's important to understand something that doesn't bother one person may anger another. Perception is powerful and can work for or against an instructors' objectives. In addition, a bad opinion will travel quicker than a good one. If a student feels the instructor doesn't care they'll share their experience with several friends. Instructing is complex and doesn't have one correct method. It's a very intellectual trade, so a good instructor should realize perfection can't be achieved, but understands it's a process that's needs to be constantly improved.

References

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How Learning Works: Seven Research-Based Principles for Smart Teaching.* San Francisco, CA: Jossey-Bass.

Baxter-Magolda, M. (1992). *Knowing and reasoning in college: Gender- related patterns in students' intellectual development.* San Fransico: Jossey-Bass.

Chickering, A. (1969). *Education and Identity.* San Fransico: Jossey-Bass.

Steele, C., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology* , 797-811.

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Principles of Flight Instruction

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Chapter 1 Reflection

It is hard to believe that my biggest monetary investment in my life thus far has been in the category of learning, when ironically, I learn every day of my life for free. Mostly free that is, occasionally at the cost of a mistake. After reading the first chapter of *How Learning Works*, I realized my learning at Parks College has just as much to do with my *prior* knowledge as it does with the knowledge that I paid for and received from my professors. This brings me to a pensive cross road where I wonder where my knowledge came from. It is hard to map my previous experiences and say whether or not they came from school or outside experiences, or something completely unknown. Additionally, it is also fair to question how accurate this knowledge is. I imagine it is even harder for an instructor to correctly gauge to what extent my understanding lies on a given subject. The following reflection is an organized breakdown of my thoughts on the first chapter in *How Learning Works* titled "How Does Students' Prior Knowledge Affect Their Learning", including my take on how I can better myself as a flight instructor and how I learn as an individual.

Perceptions are the basis for learning. Every situation one finds themselves in, information is perceived and stored away. These perceptions play a major role in how we learn as well as how previous knowledge impacts our learning. The perceptions that came with me to college have both hurt and aided me in my studies. For example, my father is a retired Marine

and current airline pilot. I grew up learning aviation lingo and how the airline industry works just by being around him. I have reinforced those perceptions with more in depth knowledge here at Parks. I knew that the director of operations was an important person, but what did such a person do? After taking my air carrier operations class, I now understand what the job description entails. But additionally, due to my real-world experience knowing a director of operations, I know how their lifestyle differs from a line pilot, how they bid for trips, and what type of responsibility they hold socially amongst their peers. According to *How Learning Works* I could describe this prior knowledge as accurate but incomplete. My air carrier operations course activated such prior knowledge and helped me complete my knowledge about the position. This now leads me to insights. The majority of chapter one is understanding prior knowledge. This prior knowledge, gained by the student's previous perceptions, needs to be grouped together to get meaningful wholes and become insight. But for an instructor to be effective, they must be able to understand the prior knowledge of their students, including the perceptions that led them to gain that knowledge, so they can help form insights. I do think that this is important for someone becoming a flight instructor to realize. In my opinion learning happens in blocks, and if I know what kind of blocks my student has, what they are made of, and what they are missing, I can provide the best instruction possible to create insights.

To become a flight instructor, one has to become a professional in two fields. The FAA requires that an applicant receive training in the fundamentals of instruction in addition to mastering declarative and procedural knowledge of aviation training. What's interesting about this requirement is that an applicant, such as myself, is not only learning the basics of learning, but is using fundamentals of knowledge acquisition in their training. For example, the average

commercial pilot has flown steep turns more times than they can count. They are always done by memorizing the procedures specific to the aircraft being flown, then going out and flying the procedure. If one could remember back to the first day someone taught he or she steep turns, there was probably a basic lesson on the aerodynamics of a turn and explanations of mistakes commonly made during a steep turn. Through this constant repetition, one builds a solid procedural knowledge and a working declarative knowledge of steep turns. In *How Learning Works,* the author makes a point that these two types of knowledge are separate. Case and point, as a flight instructor I will have to increase my declarative knowledge (being able to brief and answer all questions steep turns in my student's first exposure) while adding to my procedural knowledge (flying the maneuver from the right seat). But as an instructor, I will have to make sure "[I am] clear in [my] own [mind] about the knowledge requirements of different tasks and that [I] not assume...students have one kind of knowledge…" (*How Learning Works* 19-20). I understand this to mean I will have to teach the material in each hemisphere of learning so that I can properly portray the information in a way to develop my students procedural and declarative knowledge. This requires me to do three things. First, I must learn what declarative and procedural knowledge is; this comes from the training I receive on the fundamentals of flight instruction. Second, I must make sure my procedural and declarative knowledge are up to the standards of instructional knowledge required by the FAA. Third, I must teach my student, per the Airmen Certification Standards (ACS), steep turns in such a way that I supply them with the basic building blocks to acquire the declarative and procedural knowledge.

When I got my private pilot certificate, I did not feel my ground knowledge was adequate. My instructor implemented a training schedule where I learned online through

Sporty's Pilot Ground School course and then we flew out at the airport. There was no person to person interactive ground lessons. I received my private pilot certificate and felt totally comfortable and confident in the air, but felt devoid of the knowledge I thought I should have. I knew basic definitions on a rote level and I could regurgitate lines back to my instructor such as "pitch for airspeed, throttle for altitude." But when it came to applying this information, I had no clue what it meant and why. We can relate this back to the insufficient prior knowledge concept. Arguably, I had inaccurate prior knowledge. I would use words like "laminar boundary layer" to describe things that had nothing to do with laminar flow. I would show up to my flights with notes, immaculately organized and color coded; all of the assigned reading was always completed before briefs and flights. When it came down to meeting with my first instructor at a new location, he assumed I knew it all, however I felt I did not. I had no idea what I was doing at all. I would study and take notes, but I was unable to apply these notes. Sidebar, I did not do a good job as a student communicating with my instructor and letting him know I did not feel confident. That is my responsibility as a student and I learned over time how to communicate my thoughts in an sufficient way as to explain where I was at. At the time, there was not a lot of correlation between my ground knowledge and the aircraft. *How Learning Works* talks about assessing a student as to understand what their prior knowledge is. For example, I would show up at the airport for my lesson and my instructor would "assess" my prior knowledge through the evidence of my perfectly crafted notes. But, he would never ask me questions and I was terrified to look incompetent, so I kept up the façade of studiousness my instructor falsely crafted for me. Had my instructor actually questioned my notes and my logic in my notes, he would have found the void spanning my procedural and declarative knowledge was quite vast.

It is important for an instructor to assess prior knowledge so they can build an efficient training plan. The plan is important so the student does not get frustrated and can find exactly where they are in the bigger scheme of things. But additionally, the instructor needs to fill the knowledge gaps the student will inherently have throughout their training, especially with early stage pilots. Not only is the assessment important to the student's progress, but also to the system. As a flight instructor, my job is to keep the system safe by properly training pilots. If I pass a pilot who is incompetent but has great notes and regurgitation skills, am I doing my job? We don't want incapable pilots endangering the lives of others in the air and on the ground. I realize that I will need to understand how to assess my students properly.

To start off, the FAA outlines 8 characteristics of effective assessment. The assessment needs a clear objective, have organization, and it must be comprehensive. If an assessment does not have these qualities in a strong manner, then it is difficult to effectively assess a student. In my case, my instructor was not comprehensive nor did he have an objective. Arguably my first instructor didn't assess me on the ground, only in the sky. As an instructor, these characteristics need to be in my assessments.

To understand what my students know and don't know, I need to activate their prior knowledge. *How Learning Works* talks about methods to activate such knowledge. One of the ways that some students value in activating prior knowledge is building concept maps. This can find trends of information or patterns. If this x is true, does it require a y? When the activity is completed, there will be a knowledge map right in front of them, completed. One can then assess where the knowledge gaps are and can build a cue of questions for the instructor. This may be useful for some instructors to assess prior knowledge and can certainly be a tool. However, I

personally do not feel I benefit from the idea of concepts maps; different ways work for different people.

Another method that I believe comes in handy, especially in groups of students, is brainstorming. The key with brainstorming is participation. If students do not participate then it can be difficult to implement such an activity, as one could imagine. According to *How Learning Works*, "brainstorming can be used to uncover beliefs, associations, and assumptions" and requires the students to debate facts and concepts that they might have from their prior knowledge. This reminded me of a story I heard from a friend; she was a flight instructor with a student who was having a tough time with landings. She knew her student had the knowledge about landings and that he was a great learner, but his cognitive skills where lacking. She paired her student with another instructor's student who wasn't a very good academic student. The two were asked questions, similar to a debate, and they would discuss back and forth. The academic student would cite a passage from the airplane flying handbook and the other student would shoot back with an action he did in the aircraft to land the airplane. My friend, the instructor, had them use their prior knowledge to help bridge the gaps in the other's logic. Sure enough, the next time she was in the airplane with her student, her student goes, "Oh this is what that kid said he did on final and it worked for me! It was similar to what the airplane flying handbook says too." I never thought much of the story until recently. The first chapter of *How Learning Works* helped me recall this event. I will very much keep this in my repertoire of skills for helping students recall and learn knowledge.

The last two types of recollection that the book brings up are inappropriate prior knowledge and inaccurate prior knowledge. Most likely, I will have to deal with inappropriate

prior knowledge. During the reading, I was thinking about the first time I heard about an aircraft stall. I completely thought that it was referring to an aircraft's engine stalling, such as a manual car when you popped the clutch too quickly. That would be inappropriate prior knowledge for aviation. While I knew what the word stall meant, I was applying it to the engine of the aircraft. Used correctly in the context of aviation, the word applies to the wings and lift. I was talking to an aspiring pilot recently and was explaining to her and her father about aviation training and the process of becoming a commercial pilot. I knew they were new to the process so I kept acronyms out of my lingo. However, it grazed over my head that even though I was not using acronyms, they still had no idea what half the terms I was saying meant. I caught myself and defined each term for them that we ran into issues with. Most words they had heard before, like private and commercial or multi engine. They are basic in concept, but my new-found friends' knowledge was inappropriate for the current conversation. I now know, when dealing with private pilot students, that I will need to focus more on defining my terms and keeping information simple. Especially when the term I am using is very similar to another, yet both have different meanings. This brings me back to my language studies in high school and college. My professor would call these terms false cognates. Though the words sounded similar in both languages, the meanings were different. Inappropriate prior knowledge can be tricky and must be confronted by the student and instructor to correct misgivings.

This leads me to how we should address such knowledge in a correct manner. This concept can be corrected easily. Inaccurate prior knowledge is such that a student does not know exactly what they are talking about. Their previous knowledge is flawed to the point where they may not fully understand the topic being discussed. The book argues that misconceptions are the

toughest type of inaccurate knowledge. I have experienced many misconceptions throughout my aviation training. They have caused me a lot of mis-answered test questions. To be frank, if one does not have misconceptions, then he or she probably did not read the study material or do some prior research before flight lessons. However, as a flight instructor, I will need to be aware of misconceptions hiding amongst my student's knowledge. Activating prior knowledge that is incorrect, such as misconceptions, in my opinion, is extremely valuable. Such a skill is very important to have as a flight instructor. How I plan to take care of misconceptions…I do not know yet. This is a topic I would like to do research on outside of *How Learning Works. How Learning Works* actually gives very little information on how to fix misconceptions other than a person forcing themselves out of shear will to change the misconception. As a flight instructor, digging up and eliminating misconceptions can make or break a student's success. However, I argue that because many students I will be working with are private pilot students, if I teach them right the first time, then I will not have to worry about misconceptions. This is a very positive outlook that I'm sure will be altered in my first few months as a flight instructor, but for now I will keep the faith.

My final reflection from the first chapter of *How Learning Works* comes from the summary. All students have prior knowledge of some sort; what the prior knowledge consists of can potentially aid or hinder a student's ability to succeed. I believe that as a flight instructor, I am laying the foundation of my student's aviation careers or hobbies. Therefore, I am not really drawing on that much previous knowledge of theirs, except to make and draw comparisons to ensure topics are more relatable and sometimes easier to grasp. I am a big fan of analogies, but I understand they have their shortfalls as well. That is why I will need to make an effort to let my

students know that my analogies are not fool proof, but can lay basis for a better understanding. Regardless, all of my thoughts on prior knowledge were quite consistent with the book's view. I was skeptical at first about writing a ten page review on one chapter, but I understand there are a million different rabbit holes to disappear into when talking about prior knowledge and building a basis for future knowledge. I am sure I will come across a student with a strong misconception, or some inaccurate prior knowledge and I will think back to this reflection and *How Learning Works* to help solve my problem.

To sum up my thoughts, I have enjoyed learning throughout my life. *How Learning Works* turns my view of learning into a systematic approach model that I can use to diagnose, teach, and understand my students as an instructor. I now see myself, and my fellow students, in a whole new way in the classroom. Not just because of *How Learning Works*, but because of the aggregate information from this book, the FAA's *Flight Instructor's Handbook* and study material I have used for the FAA Fundamentals of Instruction knowledge test. I look at how I learn and I try to change that to fit my persona and evaluate the level my knowledge is on. I ensure I am not just spitting out rote knowledge, but can apply or correlate information. Additionally, I look at how I want to teach in a whole new way. I want to cater to my students' learning styles and abilities. The first chapter of *How Learning Works* makes the case that activating prior knowledge can drastically help understand where my students are at. This can help me alleviate teaching a whole lesson on drag and then having to reteach it because my student thought we were talking about drag on a fishing reel and not an airplane. I believe the more I understand how to portray information to a student in such a way that it sticks the first

time, and the right way, I can be a highly successful instructor. Thus, activating, addressing, and correcting prior knowledge is one of the first steps to accomplishing such a goal.

How One Can Work Towards Becoming a Self-Directed Learner

[redacted]

Saint Louis University

To pursue a higher educational degree, or to gain a competitive edge in a particular market or field, a student must be able to motivate oneself to learn new material in order to use the learned material to complete a task or achieve a goal. Problem with this, however, is that the student may not understand the demands of the task and may not be asking themselves the correct probing questions to themselves to make that they are indeed making progress towards the goal or not. This process in which a person reflects on their thoughts or actions, asks themselves questions to monitor their progress, and actively makes changes to their approach to better accomplish a task is known as *metacognition* and is a key concept and process in order to for someone to guide themselves in their own learning. Metacognition, or the "thinking of your own thinking," involves the assessing of demands of a task, evaluating own knowledge and skills, planning an approach to success, monitoring current progress, and adjusting strategies as needed (Ambrose & Bridges, 2010). This continual process requires the student to always evaluate and to always make changes.

Metacognition is a wonderful tool to utilize because it offers valuable intellectual habits that can be applied across many disciplines of study while also allowing access to more flexible and usable discipline-specific knowledge. In the case of flight instruction, metacognition has been at work since day one without the student or the instructor even being aware of it.

The first step of the metacognitive process is to assess the demands of the task. This is of key importance in the metacognitive process because if a student does not know, or misinterprets, exactly what is being demanded of the student, the student's following evaluation of skills and knowledge and plan of execution, and so forth down the chain, will be inappropriate for the task, which can lead to frustration and apprehension in the student. A common struggle of

this step is that the student may not know how to properly assess the task. In primary flight instruction, a student will be tasked with flying within the airport traffic pattern. In order to prepare for the actual demands of the traffic pattern, the student should have been taught how to break down each section of the traffic pattern and the expected standards before the flight. With each leg of the pattern, different risks and hazards have increased likelihood and severity. The takeoff roll presents the risks of a tail/wing strike and possibly running off the runway which have, let's say, a medium-severity hazard associated with those risks, while the base leg presents the risk of entering a spin at a low altitude which has a high-severity hazard associated. The likelihood of these risks can further be increased if there is a high volume of traffic at the particular airport at which the student is flying and if the student is not comfortable with their radio communications skills. Proper assessment of the demands of the task will better prepare the student for proper execution of the task because the student has taken time to think about exactly what it is that is expected of them, rather than being confused and improperly applying knowledge to a certain situation which could allow for increased workload and possible frustration.

The next step in the process of metacognition is for one to evaluate one's abilities, or better yet, to get the student to evaluate his/her abilities. Students often overestimate their abilities and their actual performance of the task deviates greatly from their estimation (Ambrose & Bridges, 2010). Going back to the task of flying the traffic pattern, if a student were to just hear about the different aspects involved in flying a correct traffic pattern, that student will most likely think to themselves that it will be a piece of cake, when in reality, they will miss their cues to execute certain actions and will be "behind the airplane," which, at their experience level, can

be very dangerous. If the student were to properly and accurately evaluate his/her own abilities, he/she would understand that they are not too experienced and need help with the endeavor. This self-evaluation is not automatic, if the student has not been taught to do so. There is this inherent trait that all pilots have, to some degree, that they are confident in themselves to handle things by themselves and to look cool doing it. So if given the chance, a student pilot might just take the risk of operating an airplane at a busy airport, or even at a smaller airport that happens to have a few more airplanes in the pattern at this particular time. For the student to properly evaluate their ability, the student should be prompted to think about if whether they have flown at that certain airport before, whether they have flown with so many other aircraft in the pattern at the same time, and whether they have flown in the current weather conditions before. Also, if their answer is "yes" to any of those questions, the student should evaluate their performance when they flew with those certain variables. Anyone can do something as sloppily as they want, but it is the responsible person that does the particular task well and safely, definitely in the case of aviation.

After the evaluation of abilities comes the plan of approach on how to implement your abilities. The plan should be in a manner that accounts for the current situation or task and with ample information. Far too often do students plan a course of action that doesn't account for the correct situation while also lacking enough information of the situation (Ambrose & Bridges, 2010) which leads to only being able to rationalize approaches that do not satisfy all the requirements of the situation. Going back to the new pilot in the traffic pattern, without all the pertinent information, the pilot will only be able to conjure a plan that "sounds good," but isn't grounded in sound reason and validity. Such a plan may be "I'll take off. Fly a few laps in the pattern, and try not to die." As this plan sounds good and seems viable, a new, inexperienced

pilot, such as the one involved, does not think about all of the other factors involved with a safe takeoff and correct traffic pattern. All that a traffic pattern is is a rectangular course based off the intended landing runway, in which the pilot is expected to track a course directly over the runway and to fly a "perfect" rectangle around the runway. In this case, the flight instructor flying with the student can guide the student to thinking about all of the other considerations involved and to plan accordingly.

After the student has come up with a plan of attack, next comes the time to execute such plan. As the student executes the plan, he/she should also monitor how well that particular strategy is working. Back to the student in the traffic pattern, after her first lap around, she may have experienced a challenging crosswind which caused her to notice that not only her flight path had drifted away from the runway once airborne, but that she had become silent on the radio and did not make any of the required position reports. After the flight instructor informed the student of the error, the flight instructor could ask the student if she actually understood the concept at hand. The student should think to herself and ask herself if her current strategy is working, and if another could be more productive.

The student's monitoring of their performance leads right into the next stage of metacognition which is to reflect on the progress made by the implementation of a particular strategy. It is at this point in the cycle that a student would *answer* themselves when asked, by themselves, if the current strategy is working, and if another could be more productive. Reflection does not guarantee adjustments, however. To make their reflection hold any type of value, the student must be able to properly adjust their plan and strategy in order to try to satisfy the needs of the task. A hindrance to adjustments may be that the perceived cost of switching to

another plan and strategy is too great. This cost could be in the form of task-saturation, or even just as simple as taking out extra time to think. Each individual can prioritize the same aspect differently, so each person's scale of perceived cost can vary. But in the world of aviation, safety is the number one priority. The whole point of flying directly over the runway on the upwind leg is to keep the aircraft, and its occupants, away from obstacles on the ground and around the runway; the whole point of making radio calls is to alert other aircraft in the vicinity of your position so that a pilot can try to keep their spacing from other aircraft and so that other aircraft can try to keep their spacing from that particular pilot as to not cause an accident.

Metacognition is a continual process, in which after each full cycle, the process starts over again, building on the knowledge learned from the previous cycle. So once this student realized that she was not flying a good traffic pattern, she should start the metacognitive process over again to make sure she understands what the task at hand is demanding from her, to identify her own strengths and weaknesses, and to plan, apply, and reflect on her attack of the task.

As stated before, metacognition is not always easy at first. In order for the student to be able to perform this process on their own, the student must have practice doing it. This practice is crucial in becoming more efficient and effective with the process because the best way to get better at something is through continuous repetitions of the task. A new pupil of metacognition will need someone to "show them the ropes" and to see the metacognitive process at work before becoming a self-directed learner themselves. Two ways to promote metacognition are by the methods of modeling and scaffolding (Ambrose & Bridges, 2010). It is at the discretion of the instructor to which method is utilized, or even preferred, for the best chance of guiding the student to achieve learning autonomy.

The first method of promoting metacognition, modeling, is the method in which the instructor models how they personally would approach a task, and then walks through each step of the process aloud. An example of this could be that the flight instructor flying with the student pilot will take control of the aircraft on takeoff and throughout the rest of the traffic pattern while explaining everything that is being done to control the aircraft, and also what is being done in preparation for the next phase. After a complete cycle of the process, the instructor would explain how they would adjust their approach based on the information gathered from the previous trial and error. Another example the modeling method could be when the student and instructor are still on the ground or out of the aircraft entirely. The instructor could be giving the student ground instruction and the instructor can give the student a made up situation and question the student at various points to see how the student would begin the task, or to see what's next, or to inquire how the student would know if their strategy is working or not. Modeling is the more basic method of promoting metacognition because it is how most people instruct and receive instruction, which makes it the easier method to utilize in instruction.

The second method for promoting the metacognitive process is scaffolding, which could be used for promotion of multiple or isolated metacognitive skills (Ambrose & Bridges, 2010). The scaffolding method works contrary to how actual scaffolding is used say at a construction site. While the tangible scaffolding at a job site is built from the lower tier to the highest and taken down from the highest to the lowest, the scaffolding method builds from bottom to top the same way, but the lowest structure is removed first, with each next consequent structure. This method is useful because it introduces cognitive supports early in the learning process that are later taken down as the student develops mastery (Ambrose & Bridges, 2010). An example of

such early structure is when an instructor provides a mnemonic device for a student to use to remember how temperature affects an aircraft's true altitude in relation to an aircraft's indicated altitude. Such a device has its drawbacks, but if remembered correctly, the student will be able to automatically know which condition would be true for their current situation.

The scaffolding model can be applied in two different forms, either practice or tasks with instructor- provided structure (Ambrose & Bridges, 2010). Practice, in the sense of metacognitive scaffolding, focuses on working on individual metacognitive phases at a time. If the instructor sees that a student is having trouble with, say, the assessment phase of the metacognitive process, the instructor can lead the student through a series of exercises to build the student's ability to assess the demands of a task, with increasing complexity. Practice is useful because it allows the student to focus on only one phase at a time, rather than the whole process at once, and to be able to incorporate the skill developed from practice into the larger scale metacognitive process. The approach that more so tackles the whole situation head-on is when the instructor issues tasks, but still with some support provided. This approach can be best visualized as when an instructor assigns a task to a student, but still provides a rubric for what the instructor is expecting. After completing these certain tasks, however, the instructor will begin to charge the student with a task without an explicit rubric or guideline for what is expected, forcing the student to become fully autonomous. Both the practice and the task-to-autonomy approaches take time; the student will not gain full understanding or autonomy overnight, but with the added time and effort invested, comes the outcome that the student can more deeply understand what is expected and that the student will be able to handle new and more challenging tasks.

The more times a student repeats this metacognitive process, the easier it comes to them and the more effective they become with it. It will become almost second nature for the student to be presented with a task and be able to isolate each phase of the metacognitive process to devise a plan that best accomplishes the task, and to alter that plan if they see that it is not as effective as desired.

Now, having practiced this metacognitive process times before, the student pilot can assess the task of flying in the traffic pattern and understand the standards put in place, create a plan with as much information included – which in her case could be getting the latest airport weather information, listening to other aircraft that are already in the pattern, and asking her instructor for help or tips, - execute and monitor such plan, and make adjustments as necessary to fly safely and within standards. This inner process of a student asking themselves questions, answering those questions, and changing their behavior based off their dissatisfaction is a useful tool to use in order to produce quality work and to motivate them to learning more new information and skills to be used later which could help in the case of completing a task later in their academic career. This student's academic career would not end just as soon as they graduate college, or get to their dream job because once put into effect, the metacognitive process continues to work and the student will continue to learn under their own power in which they do not need external pressures forcing them to learn material; they just learn it and develop mastery on their own.

Performance Indicator Rubric

AABI Student Learning Outcome H: Use the Techniques, Skills and Modern Technology necessary for Professional Practice

Course: FSCI 3750 – Flight Instruction Prep I Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 9

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Identifies a small subset of necessary techniques, skills, and tools; identifies unrelated techniques, skills, and tools.	Identifies almost all of the relevant techniques, skills, and tools; missing some minor techniques, skills, and tools.	Identifies all relevant techniques, skills, and tools; does not include unrelated techniques, skills, and tools.
Explain the use of specific techniques, skills and tools of modern aviation practice.	Provides little explanation of how the techniques, skills, and tools should be used; provides incorrect explanation of how to use techniques, skills, and tools.	Explains how almost all of the techniques, skills, and tools should be used; shows adequate understanding of techniques, skills, and tools; missing the explanation of some minor techniques, skills, and tools.	Explains how all relevant techniques, skills, and tools should be used; shows in-depth understanding of techniques, skills, and tools; does not explain unrelated aspects of techniques, skills, and tools.
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Applies a small subset of the necessary techniques, skills, and tools; incorrectly applies the techniques, skills, and tools.	Correctly applies almost all of the techniques, skills, and tools; demonstrates adequate use of techniques, skills, and tools; incorrectly applies some minor techniques, skills, and tools.	Correctly applies all relevant techniques, skills, and tools; demonstrates mastery of techniques, skills, and tools; does not apply unnecessary techniques, skills, and tools.
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Provides little evidence of reflection; incorrectly attributes success or failure to certain techniques, skills, and tools.	Reflects properly on almost all of the techniques, skills, and tools; proposes some improvements or justifies properly the use of some techniques, skills, and tools; reflects improperly on some minor techniques, skills, and tools.	Reflects properly on all relevant techniques, skills, and tools; proposes several improvements or justifies properly the use of all techniques, skills, and tools; does not reflect on irrelevant techniques, skills, and tools.

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Identify necessary techniques, skills and tools of modern aviation practice for a given situation.	Stage Check Oral Exams	0%	100%	---
Explain the use of specific techniques, skills and tools of modern aviation practice.	Stage Check Oral Exams	0%	100%	---
Apply the chosen techniques, skills and tools of modern aviation practice to the given situation.	Stage Check Flight Exams	0%	100%	---
Reflect on the choice of techniques, skills and tools of modern aviation practice applied to the given situation.	Stage Check Flight Exams	0%	100%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Performance Indicator Rubric

AABI Student Learning Outcome J: Apply Pertinent Knowledge in Identifying and Solving Problems

Course: FSCI 3750 – Flight Instruction Prep I Semester Taught: Summer 2017/Fall 2017/Spring 2018 Number of Students Scored: 9

Type of Student Work Used for Assessment: Student Oral and Flight Stage Check Results

Rating Scale / Performance Indicator	Needs Improvement	Meets Expectations	Exceeds Expectations
Formulate the problem and identify key issues/variables.	Weak problem formulation; some issues/variables identified, but many missing; many criteria missing; many constraints missing; many assumptions missing.	Adequate problem formulation; most key issues/variables are identified; almost all criteria presented for ranking alternatives; Almost all constraints identified; almost all assumptions identified.	Complete and succinct problem formulation; key issues/variables identified; all relevant criteria presented for ranking alternatives; all relevant constraints identified; all relevant assumptions identified.
Analyze and justify solutions to a problem.	Limited analysis of alternatives; only some criteria evaluated; only some constraints considered; weak discussion of analysis results; missing significant steps in decision making process; weak justification for final solution.	Appropriate analysis approach; mostly correct analysis results; criteria evaluated with minor errors; constraints considered with minor errors; adequate discussion of analysis results; document decision making process.	Well thought out or clever analysis approach; complete and correct analysis results; complete consideration of constraints; detailed discussion of analysis results; detailed documentation of decision making process

Description of Assignment: The student assessments consisted of two stage check practical exams. Each stage check consists of an oral portion and a flight portion. Satisfactory (S) or Unsatisfactory (U) performance is determined in accordance with the Module Completion Standards (attached) and/or the appropriate Airmen Certification Standards (ACS)/Practical Test Standards (PTS).

Performance Indicator	Section of Audience Critique of Group Rubric	% Needs Improvement	% Meets Expectations	% Exceeds Expectations
Formulate the problem and identify key issues/variables.	Stage Check Exams	0%	100%	---
Analyze and justify solutions to a problem.	Stage Check Exams	0%	100%	---

Recommendations: In future semesters, increase time spent training new-hire instructors to improve standardization of flight and ground training. Expand upon course syllabus and training course outlines to provide instructors with greater detail regarding lesson content, training standards, and student expectations.

Note: Attached are Module Completion Standards included in the approved Training Course Outline. These documents describe the expectations and assessment standards for stage check oral and flight exams. Also attached are a summary of stage check results and example stage check grade sheets.

Indirect Measures of Assessment

Student Surveys

Department Course Evaluation Report for Aviation Science - Spring 2018

Project Title: **Parks College of Engineering, Aviation and Technology Course Evaluations**
Total Enrollment: **453**
Responses Received: **173**
Response Rate: **38.19%**

Creation Date: **Thu, Jun 14, 2018**

Intrepretation Guidelines

This report includes the aggregate of all student responses to Likert scale or multiple choice questions for all courses taught within a department in the semester.

I took this course (check all that apply)... (Aggregate)

Options	Count
to meet a requirement of an undergraduate academic major or minor	141
to meet a requirement of a graduate/professional program or minor	24
to meet an undergraduate core/general education requirement	13
as an elective (not part of any major/minor/program or core/general education requirement)	7
R-ATP credit	1

Questions about the Student (Aggregate)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
I believe my academic background was sufficient to succeed in this course.	114	51	8	0	3.61	4.00	173
The subject matter of this course was of interest to me before the course began.	110	51	12	0	3.57	4.00	173

Questions about the Student (Breakdown by Course)

I believe my academic background was sufficient to succeed in this course.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	114	51	8	0	3.61	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	3	0	0	3.50	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	10	10	2	0	3.36	3.00	22
SP2018 ASCI-1850-10-Safety Management Systems	12	4	0	0	3.75	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	6	3	1	0	3.50	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	6	2	0	0	3.75	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	2	1	1	0	3.25	3.50	4
SP2018 ASCI-4650-10-Econ of Air Transportation	9	2	0	0	3.82	4.00	11
SP2018 ASCI-4800-01-International Aviation	3	3	0	0	3.50	3.50	6
SP2018 ASCI-4800-10-International Aviation	4	1	0	0	3.80	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	2	2	0	0	3.50	3.50	4
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	2	2	2	0	3.00	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	5	1	0	0	3.83	4.00	6
SP2018 FSCI-1150-01-Flight 1	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-01-Flight 2	2	2	0	0	3.50	3.50	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2650-01-Navigation Foundations	4	5	1	0	3.30	3.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The subject matter of this course was of interest to me before the course began.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	110	51	12	0	3.57	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	3	0	0	3.50	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	10	9	3	0	3.32	3.00	22
SP2018 ASCI-1850-10-Safety Management Systems	9	7	0	0	3.56	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	6	2	0	0	3.75	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	7	3	0	0	3.70	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	5	3	0	0	3.63	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	3	0	1	0	3.50	4.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	3	1	0	0	3.75	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	4	4	3	0	3.09	3.00	11
SP2018 ASCI-4800-01-International Aviation	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4800-10-International Aviation	3	2	0	0	3.60	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	3	1	0	0	3.75	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	4	0	1	0	3.60	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	2	2	2	0	3.00	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	6	0	0	0	4.00	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	2	2	0	0	3.50	3.50	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2650-01-Navigation Foundations	5	4	1	0	3.40	3.50	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

Questions about the Student (Aggregate)

	Always	Often	Sometimes	Never	Mean	Median	Total Responses
I came to each class session prepared.	108	52	12	1	3.54	4.00	173
I invested enough time and energy to meet the course requirements.	112	52	7	2	3.58	4.00	173
I asked the instructor for help when I needed it.	117	37	13	6	3.53	4.00	173

Questions about the Student (Breakdown by Course)

I came to each class session prepared.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	108	52	12	1	3.54	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	3	0	0	3.50	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	11	10	1	0	3.45	3.50	22
SP2018 ASCI-1850-10-Safety Management Systems	12	3	1	0	3.69	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	5	2	0	1	3.38	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	3	3	0	0	3.50	3.50	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	0	2	0	3.20	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	5	3	2	0	3.30	3.50	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	4	0	0	3.50	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	1	2	1	0	3.00	3.00	4
SP2018 ASCI-4350-01-Team Resource Management	3	3	0	0	3.50	3.50	6
SP2018 ASCI-4650-01-Econ of Air Transportation	3	0	1	0	3.50	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	9	2	0	0	3.82	4.00	11
SP2018 ASCI-4800-01-International Aviation	4	1	1	0	3.50	4.00	6
SP2018 ASCI-4800-10-International Aviation	2	3	0	0	3.40	3.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	4	0	0	0	4.00	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	4	2	0	0	3.67	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	5	0	1	0	3.67	4.00	6
SP2018 FSCI-1150-01-Flight 1	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	6	3	1	0	3.50	4.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	1	2	0	0	3.33	3.00	3

I invested enough time and energy to meet the course requirements.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	112	52	7	2	3.58	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	3	0	0	3.50	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	12	10	0	0	3.55	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	10	5	1	0	3.56	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	5	2	0	1	3.38	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	4	1	1	0	3.50	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	5	4	0	1	3.30	3.50	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	3	1	0	3.38	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	3	1	0	0	3.75	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	9	2	0	0	3.82	4.00	11
SP2018 ASCI-4800-01-International Aviation	4	1	1	0	3.50	4.00	6
SP2018 ASCI-4800-10-International Aviation	4	1	0	0	3.80	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	4	0	0	0	4.00	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	3	2	0	0	3.60	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	6	0	0	0	4.00	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	1	1	0	3.50	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	3	7	0	0	3.30	3.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

I asked the instructor for help when I needed it.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	117	37	13	6	3.53	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	2	1	0	3.33	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	11	5	4	2	3.14	3.50	22
SP2018 ASCI-1850-10-Safety Management Systems	14	1	0	1	3.75	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	6	1	0	1	3.50	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	4	1	1	0	3.50	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	6	1	2	1	3.20	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	5	3	0	0	3.63	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	9	1	1	0	3.73	4.00	11
SP2018 ASCI-4800-01-International Aviation	4	1	0	1	3.33	4.00	6
SP2018 ASCI-4800-10-International Aviation	4	1	0	0	3.80	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	3	1	0	0	3.75	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	5	0	0	0	4.00	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	3	2	1	0	3.33	3.50	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	2	0	0	3.67	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	2	7	1	0	3.10	3.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	3	0	0	0	4.00	4.00	3

Questions about the Course (Aggregate)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Expected learning outcomes for the course were clearly communicated.	124	41	4	4	3.65	4.00	173
Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.	133	33	5	2	3.72	4.00	173
The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.	116	43	10	4	3.57	4.00	173
The course required me to apply what I learned in new ways.	124	36	9	4	3.62	4.00	173
The course challenged me intellectually.	116	46	8	3	3.59	4.00	173
Overall, I think this course was excellent.	105	50	12	6	3.47	4.00	173

Questions about the Course (Breakdown by Course)

Expected learning outcomes for the course were clearly communicated.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	124	41	4	4	3.65	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	4	2	0	0	3.67	4.00	6
SP2018 ASCI-1850-01-Safety Management Systems	15	7	0	0	3.68	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	16	0	0	0	4.00	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	4	0	0	3.20	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	6	4	0	0	3.60	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	5	3	0	0	3.63	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	2	1	1	0	3.25	3.50	4
SP2018 ASCI-4650-10-Econ of Air Transportation	7	2	1	1	3.36	4.00	11
SP2018 ASCI-4800-01-International Aviation	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	3	0	0	1	3.25	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	1	3	2	0	2.83	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	0	0	2	3.00	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2650-01-Navigation Foundations	7	3	0	0	3.70	4.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

Course requirements (attendance, participation, readings, assignments, exams, etc.) were clearly communicated.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	133	33	5	2	3.72	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	5	1	0	0	3.83	4.00	6
SP2018 ASCI-1850-01-Safety Management Systems	18	4	0	0	3.82	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	16	0	0	0	4.00	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	5	1	0	0	3.83	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	2	2	0	2.80	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	8	2	0	0	3.80	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	6	2	0	0	3.75	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	6	0	0	0	4.00	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	8	2	1	0	3.64	4.00	11
SP2018 ASCI-4800-01-International Aviation	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	2	1	1	0	3.25	3.50	4
SP2018 ASCI-5030-01-Aviation Security Management	5	0	0	0	4.00	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	1	5	0	0	3.17	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	0	0	2	3.00	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2650-01-Navigation Foundations	6	3	1	0	3.50	4.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The course design (timing of and relationships among readings, discussions, labs, assignments, exams, etc.) supported my achievement of the course learning outcomes.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	116	43	10	4	3.57	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	5	0	1	0	3.67	4.00	6
SP2018 ASCI-1850-01-Safety Management Systems	15	7	0	0	3.68	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	15	1	0	0	3.94	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	2	1	0	0	3.67	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	3	1	0	3.00	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	6	4	0	0	3.60	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	4	0	0	3.50	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	0	2	0	3.00	3.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	3	1	2	3.00	3.00	11
SP2018 ASCI-4800-01-International Aviation	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	2	1	1	0	3.25	3.50	4
SP2018 ASCI-5030-01-Aviation Security Management	5	0	0	0	4.00	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	0	5	1	0	2.83	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	2	1	1	2	2.50	2.50	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	5	4	1	0	3.40	3.50	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The course required me to apply what I learned in new ways.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	124	36	9	4	3.62	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	3	0	0	3.50	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	15	5	2	0	3.59	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	14	2	0	0	3.88	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	6	1	1	0	3.63	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	4	2	0	0	3.67	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	4	0	0	3.20	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	8	2	0	0	3.80	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	5	3	0	0	3.63	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	1	1	0	3.25	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	3	2	1	3.09	3.00	11
SP2018 ASCI-4800-01-International Aviation	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	3	0	0	1	3.25	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	4	0	1	0	3.60	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	4	1	1	0	3.50	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	3	0	1	2	2.67	3.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2650-01-Navigation Foundations	8	2	0	0	3.80	4.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	3	0	0	0	4.00	4.00	3

The course challenged me intellectually.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	116	46	8	3	3.59	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	3	2	1	0	3.33	3.50	6
SP2018 ASCI-1850-01-Safety Management Systems	12	9	1	0	3.50	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	12	3	1	0	3.69	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	2	1	0	0	3.67	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	0	0	1	3.63	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	3	2	1	0	3.33	3.50	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	3	1	0	3.00	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	7	3	0	0	3.70	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	5	3	0	0	3.63	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	1	3	0	0	3.25	3.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	3	1	0	0	3.75	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	7	2	2	0	3.45	4.00	11
SP2018 ASCI-4800-01-International Aviation	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4800-10-International Aviation	3	2	0	0	3.60	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	3	0	0	1	3.25	4.00	4
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	6	0	0	0	4.00	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	2	2	1	1	2.83	3.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2550-01-Flight 4	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2650-01-Navigation Foundations	8	2	0	0	3.80	4.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	3	0	0	0	4.00	4.00	3

Overall, I think this course was excellent.							
Course Name	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Median	Total Responses
Overall	105	50	12	6	3.47	4.00	173
SP2018 ASCI-1510-01-The Air Transportation System	5	1	0	0	3.83	4.00	6
SP2018 ASCI-1850-01-Safety Management Systems	13	9	0	0	3.59	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	14	2	0	0	3.88	4.00	16
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	6	1	1	0	3.63	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	5	1	0	0	3.83	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	1	3	1	0	3.00	3.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	5	5	0	0	3.50	3.50	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	4	0	0	3.50	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	1	1	2	0	2.75	2.50	4
SP2018 ASCI-4350-01-Team Resource Management	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	3	1	0	0	3.75	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	4	3	2	2	2.82	3.00	11
SP2018 ASCI-4800-01-International Aviation	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4800-10-International Aviation	4	1	0	0	3.80	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	2	1	0	1	3.00	3.50	4
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	0	3	2	1	2.33	2.50	6
SP2018 ASCI-6070-01-Aviation Training Methods	3	0	1	2	2.67	3.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	2	6	2	0	3.00	3.00	10
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

Questions about the Instructor: (Aggregate)

	Always	Often	Sometimes	Never	Mean	Median	Total Responses
The instructor communicated ideas and information clearly.	139	48	12	10	3.51	4.00	209
The instructor demonstrated enthusiasm for the subject matter.	162	31	5	11	3.65	4.00	209
The instructor provided feedback/critique that helped me with subsequent work in the course.	152	29	18	10	3.55	4.00	209
The instructor treated students with respect.	180	14	8	7	3.76	4.00	209
The instructor was available for assistance when needed.	170	24	7	8	3.70	4.00	209
Overall, I think this instructor was excellent.	159	29	11	10	3.61	4.00	209

Questions about the Instructor: (Breakdown by Course)

The instructor communicated ideas and information clearly.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	139	48	12	10	3.51	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	6	3	1	2	3.08	3.50	12
SP2018 ASCI-1850-01-Safety Management Systems	14	8	0	0	3.64	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	2	1	0	0	3.67	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	2	1	0	0	3.67	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	5	1	0	0	3.83	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	7	3	0	0	3.70	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	3	1	0	3.38	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	4	1	1	0	3.50	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	3	2	1	3.09	3.00	11
SP2018 ASCI-4800-01-International Aviation	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	1	1	0	0	3.50	3.50	2
SP2018 ASCI-4900-10-Senior Seminar	4	2	0	2	3.00	3.50	8
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	1	3	2	0	2.83	3.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	3	1	0	2	2.83	3.50	6
SP2018 FSCI-1150-01-Flight 1	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	11	5	3	1	3.30	4.00	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	1	2	0	0	3.33	3.00	3

The instructor demonstrated enthusiasm for the subject matter.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	162	31	5	11	3.65	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	8	1	1	2	3.25	4.00	12
SP2018 ASCI-1850-01-Safety Management Systems	18	4	0	0	3.82	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	2	0	0	3.60	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	9	1	0	0	3.90	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	7	1	0	0	3.88	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	2	0	0	3.50	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	4	2	0	0	3.67	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	2	2	2	2.91	3.00	11
SP2018 ASCI-4800-01-International Aviation	5	0	0	1	3.50	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	5	1	0	2	3.13	4.00	8
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	4	2	0	0	3.67	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	1	1	0	3.50	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	0	1	2.50	2.50	2
SP2018 FSCI-2650-01-Navigation Foundations	11	7	1	1	3.40	4.00	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The instructor provided feedback/critique that helped me with subsequent work in the course.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	152	29	18	10	3.55	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	8	1	1	2	3.25	4.00	12
SP2018 ASCI-1850-01-Safety Management Systems	15	6	1	0	3.64	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	6	1	1	0	3.63	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	5	1	0	0	3.83	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	6	3	1	0	3.50	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	7	0	1	0	3.75	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	3	0	1	0	3.50	4.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	1	4	1	2.91	3.00	11
SP2018 ASCI-4800-01-International Aviation	6	0	0	0	4.00	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	5	0	1	2	3.00	4.00	8
SP2018 ASCI-5030-01-Aviation Security Management	4	0	1	0	3.60	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	3	2	1	0	3.33	3.50	6
SP2018 ASCI-6070-01-Aviation Training Methods	2	1	1	2	2.50	2.50	6
SP2018 FSCI-1150-01-Flight 1	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	10	7	2	1	3.30	3.50	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The instructor treated students with respect.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	180	14	8	7	3.76	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	8	1	1	2	3.25	4.00	12
SP2018 ASCI-1850-01-Safety Management Systems	18	4	0	0	3.82	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	8	0	0	0	4.00	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	1	1	0	3.40	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	9	1	0	0	3.90	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	8	0	0	0	4.00	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	3	0	1	0	3.50	4.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	0	1	0	3.67	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	8	2	1	0	3.64	4.00	11
SP2018 ASCI-4800-01-International Aviation	6	0	0	0	4.00	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	6	0	0	2	3.25	4.00	8
SP2018 ASCI-5030-01-Aviation Security Management	5	0	0	0	4.00	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	5	0	1	0	3.67	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	2	0	0	3.67	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	18	0	1	1	3.75	4.00	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

The instructor was available for assistance when needed.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	170	24	7	8	3.70	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	8	1	1	2	3.25	4.00	12
SP2018 ASCI-1850-01-Safety Management Systems	17	5	0	0	3.77	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	1	0	0	3.88	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	4	1	0	0	3.80	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	7	3	0	0	3.70	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	7	1	0	0	3.88	4.00	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	3	0	1	0	3.50	4.00	4
SP2018 ASCI-4350-01-Team Resource Management	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	6	3	2	0	3.36	4.00	11
SP2018 ASCI-4800-01-International Aviation	6	0	0	0	4.00	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	6	0	0	2	3.25	4.00	8
SP2018 ASCI-5030-01-Aviation Security Management	5	0	0	0	4.00	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	4	1	1	0	3.50	4.00	6
SP2018 ASCI-6070-01-Aviation Training Methods	4	0	1	1	3.17	4.00	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	1	0	0	3.50	3.50	2
SP2018 FSCI-2650-01-Navigation Foundations	15	3	1	1	3.60	4.00	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

Overall, I think this instructor was excellent.							
Course Name	Always	Often	Sometimes	Never	Mean	Median	Total Responses
Overall	159	29	11	10	3.61	4.00	209
SP2018 ASCI-1510-01-The Air Transportation System	7	2	1	2	3.17	4.00	12
SP2018 ASCI-1850-01-Safety Management Systems	18	4	0	0	3.82	4.00	22
SP2018 ASCI-1850-10-Safety Management Systems	30	0	0	2	3.81	4.00	32
SP2018 ASCI-2020-01-ATC Operations and Procedures	3	0	0	0	4.00	4.00	3
SP2018 ASCI-2750-01-Accident Investigation	3	0	0	0	4.00	4.00	3
SP2018 ASCI-3020-01-Jet Transport Systems II	7	0	1	0	3.75	4.00	8
SP2018 ASCI-3040-01-Advanced ATC Tower & Radar	6	0	0	0	4.00	4.00	6
SP2018 ASCI-3062-01-Turbine Aircraft Transition	3	2	0	0	3.60	4.00	5
SP2018 ASCI-3100-01-Air Carrier Operations	10	0	0	0	4.00	4.00	10
SP2018 ASCI-3100-10-Air Carrier Operations	4	4	0	0	3.50	3.50	8
SP2018 ASCI-4022-01-Jet Flying Tech II Lect	2	1	1	0	3.25	3.50	4
SP2018 ASCI-4350-01-Team Resource Management	4	0	2	0	3.33	4.00	6
SP2018 ASCI-4650-01-Econ of Air Transportation	4	0	0	0	4.00	4.00	4
SP2018 ASCI-4650-10-Econ of Air Transportation	5	2	2	2	2.91	3.00	11
SP2018 ASCI-4800-01-International Aviation	5	1	0	0	3.83	4.00	6
SP2018 ASCI-4800-10-International Aviation	5	0	0	0	4.00	4.00	5
SP2018 ASCI-4900-01-Senior Seminar	2	0	0	0	4.00	4.00	2
SP2018 ASCI-4900-10-Senior Seminar	5	1	0	2	3.13	4.00	8
SP2018 ASCI-5030-01-Aviation Security Management	4	1	0	0	3.80	4.00	5
SP2018 ASCI-5470-01-Quantitative Data Analysis	3	2	1	0	3.33	3.50	6
SP2018 ASCI-6070-01-Aviation Training Methods	3	1	1	1	3.00	3.50	6
SP2018 FSCI-1150-01-Flight 1	2	0	0	0	4.00	4.00	2
SP2018 FSCI-1550-01-Flight 2	3	1	0	0	3.75	4.00	4
SP2018 FSCI-1550-42-Flight 2	1	1	0	0	3.50	3.50	2
SP2018 FSCI-1550-44-Flight 2	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2150-01-Flight 3	2	0	0	0	4.00	4.00	2
SP2018 FSCI-2550-01-Flight 4	1	0	1	0	3.00	3.00	2
SP2018 FSCI-2650-01-Navigation Foundations	13	5	1	1	3.50	4.00	20
SP2018 FSCI-3700-01-Prin Flight Instruction I	2	1	0	0	3.67	4.00	3

Indirect Measures of Assessment

Alumni Surveys

Progress %	Finished	RecordedDate	Q2	Q67	Q68
Progress	Finished	Recorded Date	Please select which program you studied. If your academic program is not included in the list below, it is merely because there is not space for an exhaustive list of all possible majors once offered at Parks College. We have limited the list to those programs that are currently being offered. We value the input of all alumni. If your program is not listed, please select "Other" to enter the name of your program and continue with the survey. - Selected Choice	FS Name	What year did you graduate?
100	TRUE	5/15/2018 11:59	Flight Science		2015
100	TRUE	5/15/2018 14:23	Flight Science		2017
100	TRUE	5/15/2018 14:40	Flight Science		2017
100	TRUE	5/16/2018 13:28	Flight Science		2015
100	TRUE	5/16/2018 23:18	Flight Science		2015
100	TRUE	5/17/2018 8:13	Flight Science		2017
100	TRUE	5/17/2018 16:52	Flight Science		2017
100	TRUE	5/18/2018 15:08	Flight Science		2017
100	TRUE	5/18/2018 21:19	Flight Science		2015
100	TRUE	5/19/2018 14:10	Flight Science		2015

Q69 What is the name of the company you currently work for?	Q70 What is your current job title?	Q71 What is your preferred email address?	Q73 Did you pursue higher studies after graduating from Parks College?
Saint Louis university	Flight instructor		Yes
Meisinger Aviation	Pilot		No
Leidos	Aeronautical Analyst		No
GoJet Airlines	First Officer		No
Cathay Pacific Airways	Second officer		No
United States Marine Corps	Marine Corps General Officer		No
United States Navy	Student Naval Aviator		No
Boutique Air	First Officer		No
GoJet Airlines	Captain		No
MAT Aire, Inc.	Chief Pilot		No

Q74 Please list school(s) attended, degrees/certificates earned and what year you graduated:	Q75_1 How well do you feel your education at Saint Louis University prepared you in fulfilling the following program objectives: - To enhance your broad-based knowledge:	Q75_2 How well do you feel your education at Saint Louis University prepared you in fulfilling the following program objectives: - To develop skills surrounding piloting, communication, research and critical thinking, decision making and team building:
Masters of business administration, graduation date December 2018	Neither Agree nor Disagree	Agree
	Disagree	Agree
	Neither Agree nor Disagree	Agree
	Strongly Agree	Strongly Agree
	Neither Agree nor Disagree	Strongly Agree
	Disagree	Agree
	Disagree	Disagree
	Agree	Strongly Agree
	Neither Agree nor Disagree	Agree
	Strongly Agree	Strongly Agree

Q75_3 How well do you feel your education at Saint Louis University prepared you in fulfilling the following program objectives: - To develop abilities to succeed in life regardless of their chosen fields:	Q75_4 How well do you feel your education at Saint Louis University prepared you in fulfilling the following program objectives: - To develop an attitude reflecting an education at a Jesuit University:	Q76 Of the undergraduate courses in Flight Science, tell us which was your favorite and why:	Q77 How could we better prepare students to satisfy these objectives? (e.g., additional topics, courses, concentration areas, minors, etc.)
		Aviation law. I found this class challenging and I feel like I learned about how to protect myself legally as a flight instructor.	I think all students should be encouraged to pursue a minor outside of the flight science minors to broaden their knowledge and future prospects.
		course was the most valuable aviation	be repaired or replaced to allow
Strongly Agree	Strongly Agree	Saul Robinson was a joy to work with. He Both are applicable to my career and I	course should be mandatory. Also, other internship opportunities. It is tough to
Disagree		was helpful in preparing my career as an	be offered.
			activities or situational examples
			required to make decisions. In the Marine Corps, we are all briefed on a
		Concepts in Aerodynamics with Saul Robinson. The class felt advanced and challenged us to understand new concepts.	general scenario, then we make decisions afterwards. They are called Tactical Decision Games (TDGs). This promotes creativity, innovation,
Disagree	Disagree	semesters). I had a blast with Dr.	science department runs into is old
Agree	Agree	a fun environment and good corse	situations, itâ€™s easy when you get
Agree	Agree	Accident Investigation. Because Terry	The careers that Flight Science students
Strongly Agree	Neither Agree nor Disagree	This gave me real-world practical	well as essential skills necessary for real-

Q78_1 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Apply knowledge of mathematics, science, and applied sciences to aviation-related disciplines	Q78_2 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Analyze and interpret data	Q78_3 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Function on multi-disciplinary and diverse teams	Q78_4 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Understand professional and ethical responsibility
Strongly Agree	Agree	Agree	Strongly Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Agree	Agree	Agree	Agree
Agree	Agree	Agree	Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Agree	Agree	Agree	Strongly Agree
Strongly Agree	Strongly Agree	Agree	Strongly Agree
Agree	Agree	Agree	Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Q78_5 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Communicate effectively, including both written and oral communication skills	Q78_6 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Recognize the need for, and engage in, life-long learning	Q78_7 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Have knowledge of contemporary issues	Q78_8 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Use the techniques, skills, and modern technology necessary for professional practice
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Agree	Agree	Agree	Agree
Neither Agree nor Disagree	Agree	Agree	Agree
Strongly Agree	Strongly Agree	Agree	Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
Strongly Agree	Agree	Agree	Strongly Agree
Agree	Neither Agree nor Disagree	Neither Agree nor Disagree	Agree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Q78_9 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Understand the national and international aviation environment	Q78_10 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Apply pertinent knowledge in identifying and solving problems	Q78_11 When you graduated from Parks College with a degree in Flight Science, you were prepared to do the following: - Apply knowledge of business sustainability to aviation issues
Strongly Agree	Strongly Agree	Strongly Agree
Agree	Strongly Agree	Neither Agree nor Disagree
Strongly Agree	Strongly Agree	Strongly Agree
Strongly Agree	Agree	Disagree
Disagree	Neither Agree nor Disagree	Disagree
Agree	Strongly Agree	Agree
Agree	Strongly Agree	Neither Agree nor Disagree
Strongly Agree	Strongly Agree	Strongly Agree
Agree	Agree	Neither Agree nor Disagree
Agree	Strongly Agree	Neither Agree nor Disagree

Q79
Additional Comments:

Some of my communciation/writing ability stems from taking classes outside the flight science courses. I had a minor in business administration which gave me a broader perspective with regards to global issues.

I did not actively research aviation (commercial, corporate, private, etc) while at Parks College. I think it would be beneficial to require some research different airlines etc. in order to build up the understanding of every student. Maybe even try to plan for non-mandatory field trips to see what the airlines are all about, inside and out.