Assessment of Aviation Program Outcomes

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<th>Semester: Fall 2014</th>
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<tbody>
<tr>
<td>Learning Outcomes</td>
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<td>1. Safety Practices</td>
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<td>2. Flying Skills</td>
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<td>3. Career/Goals</td>
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<td>4. Critical Thinking</td>
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<td>5. Leadership Skills</td>
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**Safety Practices:** Students are able to communicate the significance of safety practices as a core tenet of all aviation operations through oral, written and practical examination.

**Flying Skills:** Students consistently excel in practical flying skills with appropriate levels of instructional knowledge displayed throughout their coursework.

**Career/Goals:** Students are able to articulate their career path and goals and demonstrate their progress towards achieving overarching aviation goals.

**Critical Thinking:** Students are able to demonstrate their critical thinking and problem solving skills as they apply to the wide array of aviation considerations.

**Leadership Skills:** Students are encouraged to develop leadership skills through group projects, instructing opportunities and involvement with student organizations and industry.

**Notes:**
1. Percentages indicate Flying Skills assessed in the CRJ700. More rigorous assessment of flying skills occurs at the flight school (North Star Aviation) during Stage Checks and Practical Exams. Nevertheless, these results indicate the need for a more comprehensive review of flying skills in the jet simulator. This is a new teaching tool (as of Spring 2014) for the program, so the syllabus and grading criteria are under continuous review.
CONTINUOUS ASSESSMENT AND IMPROVEMENT
(AABI 201, Criteria 2.10, 3.10 and 4.10)

Fall 2014 Assessment Meeting Results

Introduction

A continuous assessment meeting is scheduled and held at the conclusion of the fall and spring semesters. Each of the categories below is examined and is given one of the following three scores:

1. This category needs improvement. Aviation faculty members recommend the following changes:

2. This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

3. This category is satisfactory and requires no changes at this time

If a category needs improvement, or is considered satisfactory with recommended changes, comments are required. These comments and other meeting minutes will be made available during the site visit.

Following are the assessment results from the December XX, 2014 meeting:
Students

Timeline (Schedule) of Assessments

Assessment of admissions, retention, and graduation requirements, processes, rates, and placements are conducted formally throughout each semester through updates and analytics reports provided to the program by the College of Education (COE) Office of Assessment and Research (OAR).

An OAR representative meets with the program coordinator to discuss the data, and a subsequent meeting is held with the entire department at which the OAR representative presents the data to the program faculty. These updates are discussed at a regularly scheduled department meeting, at which faculty discuss and deliberate, and plan using the information.

OAR representatives are available to assist the program at the meetings and throughout the academic year, providing institutional, employment, industry and programmatic context for the data, and to facilitate problem solving and strategic planning.

Additional discussion is held at the COE Leadership Council (the program coordinator is a member), and at the annual end-of-year and beginning of year academic retreats.

This category is satisfactory and requires no changes at this time
What, How and from Whom Data are Collected

All student data collected by appropriate offices (department, admissions, registrar, etc.) is entered into the Minnesota State Colleges and Universities (MNSCU) Integrated Student Record System (ISRS). This comprehensive system of student information includes, but is not limited to:

1) Program enrollment
2) Course registration
3) Grades and status (Withdrawals, Incompletes, etc.)
4) Completion
5) Quality of admissions data (ACT, SAT, Class ranking and GPA)
6) Cumulative GPA
7) Registration and course history

These datasets, and others, are combined and maintained in the system level MNSCU data warehouse (Hyperion). COE OAR is the primary institutional data resource/contact between the program, COE, and Institutional Research for mining and analyzing data from Hyperion.

Data obtained, analyzed and reported to the program includes program and course enrollment (by semester and trended over time) quantity and quality of admitted students, retention, transfer, and graduation rates, time to completion information (by semester/entry cohort and trended over time) awarded degrees, and student success. (E.g. Dean's List, probation, and suspension).

Learning outcomes and skills assessment data are maintained at the program level and are not entered into ISRS.

This category is satisfactory and requires no changes at this time
How Assessment Results are Used

The program receives admission, enrollment, success, and retention and graduation statistics in reports from COE OAR each semester. These detailed reports include specific current semester performance information and information for the previous four semesters (four years of fall semesters or four years of spring semesters), trended in rolling snapshots and profiles.

These comprehensive program snapshots and profiles, which include a wide range of associated program performance and institutional metrics and indicators, provide a means for the program to examine trends, and work through the process of discussion and decision-making by program faculty.

The analysis and decision-making process includes discussion concerning program health, growth and improvement with, and feedback from, internal and external constituents including:

1) Students (including the four aviation Recognized Student Organizations at MSU)

2) Aviation faculty

3) College leadership (Dean, Leadership Council)

4) Academic Affairs (Through the academic mapping and planning processes)

5) Industry Advisory Board

6) Program contractor/partner, North Star Aviation

This category is satisfactory and requires no changes at this time
How Plans are Established to Address Shortcomings

Based on qualitative and quantitative data, input and feedback from OAR and internal/external constituents, plans to address shortcomings are developed collaboratively by the Program Coordinator, the faculty, and the contractor/partner, North Star Aviation.

The Dean of the College of Education is briefed on the planning process and the plan and provides feedback to the program. The OAR representative is a process, data, and analytics resource throughout the planning process.

This category is satisfactory and requires no changes at this time
How Assessment Results are Used to Improve Program Effectiveness

The wide range of data collected, analyzed and trended is used for active continuous improvement and program management across all aspects of the aviation program. Successful application of these efforts include:

1) Design and implementation of learning outcomes, tasks and skills specific rubrics in Spring 2014

2) Redesigned, proactive advising policies, procedures and tools

3) Redesigned, proactive, program management policies, procedures and tools including retention, graduation, admissions, transfer, success, and graduation analytics

4) Active contractor/partner oversight processes including weekly status meetings to collaboratively review and manage flight instruction, student progress, and program flight performance

5) Appointment of an Aviation Program Auditor (by the COE Dean) that provides external review, reporting, and recommendations/feedback

6) Input from faculty about the preparation/proficiency of students in their courses has led to curriculum change discussions that will better sequence courses

7) Regularly scheduled formal review of objective institutional, performance, student and program performance data has led to an on-going commitment to continuous improvement and support from the college and the university

This category is satisfactory and requires no changes at this time
Program Mission and Educational Goals

Mission Statement & Educational Goals
The MNSU, Mankato Aviation Department’s mission statement is as follows:

The mission of Minnesota State University’s aviation program is to educate students today who will become professionals responsible for the safe and efficient design, management, and operation of the aviation system tomorrow. The program combines all elements of a substantive university education with aviation, flight, and management components to graduate well prepared aviation professionals. Acquisition of airmanship knowledge, skills, and ability while in college develops professionalism, responsibility, self-reliance and marketable skills for early career progression, and provides important experiences which ensure a level of understanding and competency essential to becoming an effective leader in an aviation profession.

This mission statement is published on the program’s website* and in the student handbook** making it widely available for current students, potential future students, and other constituents of the university. It and the program receive full support from the institution, as evidenced by the recent placement on campus of a CRJ-700 Flight Training Device (FTD).

This mission statement is also the primary driver of the aviation program’s assessment plan and educational goals. Its philosophy encompasses all the goals defined by the institution, AABI, and the FAA in order to ensure students graduate with well rounded, aviation-focused educations that prepare them for careers in a challenging, dynamic industry. The process for evaluating these goals is ongoing. Faculty keep appraised of current trends in the industry through individual research and study, through conference attendance (e.g. AABI and World Airline Training Symposium (WATS)), and through input from outside sources such as the Industry Advisory Board. Changes to the mission statement and goals will be made when appropriate.

*http://ed.mnsu.edu/aviation-major/
**http://ed.mnsu.edu/aviation/students/handbook_8-27-2013.pdf

This category is satisfactory and requires no changes at this time
Timeline (Schedule) of Assessments

In conjunction with a department meeting, an assessment meeting is held at the end of each semester to evaluate program goals and course outcomes. The Aviation Department also solicits input from the Industry Advisory Board on an annual basis, as well as input from our industry constituents and alumni.

Since the program only recently re-established and strengthened relationships with our industry constituents, as well reaching out to alumni, the program is in the developing mode for the optimal timing and methods of gathering that assessment data from these resources.

**This category is satisfactory and requires no changes at this time**
How Assessment Results are Used

As the department continuously evaluates its goals through internal and external inputs, it makes periodic adjustments to course content and the curriculum. For example, the Industry Advisory Board provided a letter to the Aviation Department outlining areas it identified through course and program review, student interviews, and classroom and simulator training observations which require closer department review and discussion. Based on that input, appropriate action or “course corrections” will be initiated in the program. One has already occurred. This IAB review most recently resulted in the revising of the CRJ 700 jet simulator syllabus for the fall, 2014 semester.

**This category is satisfactory and requires no changes at this time**
How Plans are Established to Address Shortcomings and Improve Program Effectiveness

Within the past year, aviation program graduates have begun to meet the new flight hour requirements established by the FAA for first officer positions, and they are being aggressively hired by Minnesota based regional airlines. The department is in the process of working to establish lines of communication with the training departments of these airlines for feedback on the quality and preparedness of our graduates. As feedback is received, the program will adjust course content and curriculum accordingly.

Flying performance and progress is monitored continuously by a student’s flight instructor, the Chief Flight Instructor, and the Aviation Department throughout the duration of a flight training course. Stage checks, administered by stage check pilots, are the primary method of determining satisfactory accomplishment of flight training objectives and standards.

1) Students having difficulty making satisfactory progress meeting unit objectives and standards may be subject to further review and evaluation.

2) Beginning with the fall 2014 semester, revised, additional procedures to address students making unsatisfactory progress are being explored.

   a. Flight students who fail to successfully complete a flight lesson (not due to weather, maintenance, or illness) in a particular phase of training will repeat that lesson until all requirements for that lesson are successfully accomplished. Normally, two attempts to complete the flight lesson should be conducted before further action is considered.

      i. If a student repeats a flight lesson twice, and this situation occurs at least three times in a stage of training, the next flight lesson will be observed by a MSU faculty member, Stage instructor, or Chief Flight Instructor.

      ii. If a student repeats a flight lesson three times in a stage of training, the next lesson will be an observation flight. Documentation of the observation flight will be filed in the student’s training record. Consideration will be given to assigning the student a new flight instructor.

   b. A flight student who experience difficulties in flight training will initially be counseled by his/her instructor. This meeting will be documented and submitted into his/her training record.

      i. Flight training difficulties include, but are not limited to, a grade of less than 65% on any examination, a student who is absent from more than three scheduled flight lessons, and a significant number of repeated flight lessons.
ii. If poor performance continues, the student will meet with the Chief Instructor Pilot and an MSU faculty member. This meeting will be documented and submitted into his/her training record. The student will receive a formal notice s/he is being placed on an Aviation Flight Lab Watch List.

This category is satisfactory and requires no changes at this time
Student Learning Outcomes

This self study of the aviation program has shed light on the need for a more comprehensive, data-driven assessment plan. For as long as the program has existed, student learning has been assessed. Course grades and check ride results, including oral and written examinations, provide concrete evidence of students’ comprehension of various aviation topics. However, beginning two years ago there has been a renewed emphasis on assessments, and a new formal process that works well for the program has been created. It is intuitive, easy to learn, and provides the required data. The following pages describe the program’s new, outcome-based assessment process: how the data it collected, analyzed, and used to refine the program’s effectiveness.

Outcome Categories

Where the mission statement represents a broad summary of the program’s philosophy, measurable goals established by the Aviation Department represent the specific, targeted application of that philosophy. These goals are primarily stated as outcomes, which are assessed in each course. In other words, individual course assessment is the heart of this plan. For each required course in the aviation curriculum outcomes are identified for assessment based on the following categories:

1) Institutional Undergraduate Learning Outcomes
2) MNSU Department of Aviation Program Specific Outcomes
3) Aviation Accreditation Board International (AABI) General Outcomes
4) AABI Core Outcomes
5) FAA Restricted ATP Requirements

The Assessment Matrix shown below and repeated in Appendix I serves as the master plan, assigning outcomes to required courses based on course descriptions and content. It ensures complete, redundant coverage of all outcomes. This represents the minimum, and course instructors are free to assess additional outcomes defined by the above categories, or based on their subjective and objective goals for their classes.

This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

- This Process is still under review, with expectations of further refinements
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<td>Institutional Undergraduate Learning Outcomes for MSU</td>
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<td>Academic Achievement—Students will demonstrate competence in specific areas of academic disciplines that will directly impact their career endeavors.</td>
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<td>Civic Engagement—Students will demonstrate the awareness, knowledge, and skills to actively participate individually or collectively on issues of societal concern.</td>
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<td>Communication—Students will demonstrate the ability to effectively communicate verbally, in writing, and through digital and/or visual media.</td>
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<td>Critical Thinking—Student will demonstrate the ability to analyze situations and problems in order to identify and test solutions.</td>
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<td>Global Citizenship—</td>
<td>Students will demonstrate an awareness and knowledge of international cultures and societies.</td>
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<td>Multiculturalism/Diversity—</td>
<td>Students will demonstrate an awareness and knowledge of social, cultural and personal values of others</td>
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<td>Self-Directed Learning—</td>
<td>Students will demonstrate the ability to autonomously acquire knowledge and develop skills.</td>
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<td><strong>Aviation Program Specific Outcomes</strong></td>
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<td>Students are able to communicate the significance of safety practices as a core tenet of all aviation operations through oral, written and practical examination.</td>
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<td>Students consistently excel in practical flying skills with appropriate levels of instructional knowledge displayed throughout their coursework.</td>
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<td>Students are able to articulate their career path and goals and demonstrate their progress towards achieving overarching aviation goals.</td>
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<td>Students are able to demonstrate their critical thinking and problem solving</td>
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skills as they apply to the wide array of aviation considerations.

Students are encouraged to develop leadership skills through group projects, instructing opportunities and involvement with student organizations and industry.

<table>
<thead>
<tr>
<th>AABI General Outcomes</th>
<th>a. An ability to apply knowledge of mathematics, science, and applied sciences</th>
<th>X</th>
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<tr>
<td>b. An ability to analyze and interpret data</td>
<td>X X</td>
<td>X</td>
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<td>c. An ability to function on multi-disciplinary teams</td>
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<td>X</td>
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<td>d. An understanding of professional and ethical responsibility</td>
<td>X</td>
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<td>e. An ability to communicate effectively, including both written and verbal communication skills</td>
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<td>f. A recognition of the need for, and an ability to engage in, life-long learning</td>
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<td>g. A knowledge of contemporary issues</td>
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<td>h. An ability to use the techniques, skills, and modern technology necessary for professional practice</td>
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<td>i. An understanding of the national and international aviation environment</td>
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<tr>
<td>AABI Core Outcomes</td>
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<td>j. An ability to apply pertinent knowledge in identifying and solving problems.</td>
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<td>k. apply knowledge of business sustainability to aviation issues</td>
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<td>Knowledge of aircraft design, performance, operating characteristics, and maintenance</td>
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<td>Knowledge of national and international aviation law, regulations, labor relations</td>
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<td>Knowledge of airports, airspace, and air traffic control</td>
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<td>Knowledge of meteorology and environmental issues</td>
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<td>Knowledge of aviation safety and human factors</td>
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<td>Knowledge of attributes of an aviation professional, career planning, and certification</td>
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<td>FAA Restricted ATP</td>
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<td>Aerodynamics and Aircraft Performance</td>
<td>X</td>
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<td>Aircraft Systems</td>
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<td>Aviation Human Factors</td>
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<td>Air Traffic Control (ATC) and Airspace</td>
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<td>Aviation Law and Regulations</td>
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<td>Aviation Weather</td>
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<td>Aviation Safety</td>
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</table>
Timeline & Assessment Process
Each instructor receives a Course-Specific Assessment Plan that includes a table listing only those outcomes identified in the matrix for his/her specific course. This plan consists of two forms: ‘AVIA XXX Assessment Worksheet’ and ‘AVIA XXX Course Assessment’ (see below).

One Assessment Worksheet is filled out for every student in the class (an example from Spring 2014, with the student’s name redacted, is provided below.) This is done when grades are entered at the end of the semester, or throughout the semester as the student progresses through each learning outcome. For each outcome the instructor must determine:

1) The number of students Not Proficient, Proficient, and Highly Proficient
2) The most appropriate assessment tool(s)
3) A correction plan for outcomes with results that are less than 70% Proficient

The instructor also decides which tools to use when assessing each outcome. The tools are listed on the Assessment Worksheet, and the professor can add to this list. In Aviation Safety (AVIA 437), for example, the professor added ‘PR – Presentation’ as an addition Direct Measure tool.

1) As an example, the midterm and final exams for a class might contain questions that assess the AABI Core Outcome, “Knowledge of Meteorology and Environmental Issues,” and the FAA Restricted ATP Outcome, “Aviation Weather.” When grading the tests, the course instructor can determine each student’s level of proficiency for these outcomes based on the answers to the specific exam questions. One of the assessment tools in this case would be, “OQ – Objective Exam Questions.”

2) Ideally the course instructor will choose two to three assessment tools per outcome in order to create a complete picture of each student’s comprehension. There is a good amount of subjectivity build into this plan, especially when using assessment tools such as, “ES – Reflective Essays,” or “OB – Observations.” This is designed around the concept of academic freedom, allowing the course instructor to exercise judgment in how an outcome is taught and assessed.

This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

- Considering a change to once/year
How Assessment Results are Used (i.e. ‘Closing the Loop’)

After the course instructor assesses each student with the Assessment Worksheet, s/he fills out the Course Assessment form, totaling the proficiency levels for each outcome. Here the course instructor can see, on one sheet, those areas of the course that meet the specified outcomes, and those areas requiring a change of instruction.

The department goal is 70% Proficient for each outcome. In other words, fewer than 30% of the students should not be above or below the Proficient level. Above (i.e. greater than 30% Highly Proficient) implies the course is too easy for a given outcome. Below implies the opposite. Either way, this suggests that the method of instruction must change. The course instructor summarizes what will change in the ‘Correction Plan’ column of the form.

For example, if greater than 30% of the students are Not Proficient for a given outcome, the course instructor could write, “Create an additional assignment,” as the correction plan. This method of assessing proficiency levels and creating correction plans to address shortcomings effectively closes the loop of the assessment process. When the instructor next teaches the class, using the correction plans devised from the previous assessment, s/he then reassesses to see if the results changed.

This process also works at the program level. If a given course identifies shortcomings in the students’ abilities to achieve outcomes, the faculty may decide that a change in the curriculum is required, for example, to better prepare those students.

This category is satisfactory and requires no changes at this time
## Course Assessment Worksheet Example

### AVIA XXX Assessment Worksheet

<table>
<thead>
<tr>
<th>Student:</th>
<th>Semester:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor:</td>
<td>External Review:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Not Proficient (D,E)</th>
<th>Proficient (B,C)</th>
<th>Highly Proficient (A)</th>
<th>Assessment Tools/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Critical Thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aviation Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Safety Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Critical Thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AABI General Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.1.g. Contemporary Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.1.i. National/International Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AABI Core Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.2.3. Safety/Human Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.2.5. Airports/Airspace</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FAA Restricted ATP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Human Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Aviation Safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Assessment Tools

#### Direct Measures
- (RU) Scoring Rubrics
- (CS) Case Studies
- (AQ) Embedded Questions to Assignments
- (ST) Standardized Achievement Tests
- (OQ) Objective Exam Questions
- (ES) Reflective Essays
- (CP) Collective Portfolios
- (OB) Observations

#### Indirect Measures
- (SS) Standardized Self-Report Surveys
- (FG) Focus Groups
- (XI) Exit Interviews
- (IN) Interviews
- (SU) Surveys
- (CA) Classroom Assessment
- (PR) Presentation
# Course Assessment Form Example

## AVIA XXX Course Assessment

### Learning Outcomes

<table>
<thead>
<tr>
<th>Total Not Proficient (D,E)</th>
<th>Total Proficient (B,C)</th>
<th>Total Highly Proficient (A)</th>
<th>Correction Plan (if Total Proficient number is &lt;70%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Institutional

1. Communication
2. Critical Thinking

### Aviation Program

1. Safety Practices
2. Critical Thinking

### AABI General Outcomes

1. Safety Practices
2. Critical Thinking

### AABI Core Outcomes

1. Human Factors
2. Airports/Airspace

### FAA Restricted ATP

1. Human Factors
2. Aviation Safety
Student Assessment Worksheet Example. One is completed for each student.

### AVIA 437 Assessment Worksheet

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Not Proficient (D,E)</th>
<th>Proficient (B,C)</th>
<th>Highly Proficient (A)</th>
<th>Assessment Tools/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Communication</td>
<td>X</td>
<td></td>
<td></td>
<td>RU, EQ, PR (Writing needs help)</td>
</tr>
<tr>
<td>4. Critical Thinking</td>
<td>X</td>
<td></td>
<td></td>
<td>RU, EQ, PR</td>
</tr>
<tr>
<td><strong>Aviation Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Safety Practices</td>
<td>X</td>
<td></td>
<td></td>
<td>EQ, ES, PR</td>
</tr>
<tr>
<td>4. Critical Thinking</td>
<td>X</td>
<td></td>
<td></td>
<td>RU, EQ, PR</td>
</tr>
<tr>
<td><strong>AABI General Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.1.g. Contemporary Issues</td>
<td>X</td>
<td></td>
<td></td>
<td>AQ, EQ</td>
</tr>
<tr>
<td>3.3.1.i. National/International Environment</td>
<td>X</td>
<td></td>
<td></td>
<td>AQ, EQ</td>
</tr>
<tr>
<td><strong>AABI Core Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.2.3. Safety/Human Factors</td>
<td>X</td>
<td></td>
<td></td>
<td>EQ, ES, PR</td>
</tr>
<tr>
<td>3.3.2.5. Airports/Airspace</td>
<td>X</td>
<td></td>
<td></td>
<td>AQ, EQ</td>
</tr>
<tr>
<td><strong>FAA Restricted ATP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Human Factors</td>
<td>X</td>
<td></td>
<td></td>
<td>AQ, EQ, ES</td>
</tr>
<tr>
<td>7. Aviation Safety</td>
<td>X</td>
<td></td>
<td></td>
<td>EQ, ES, PR</td>
</tr>
</tbody>
</table>

### Assessment Tools

<table>
<thead>
<tr>
<th>Direct Measures</th>
<th>Indirect Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>(RU) Scoring Rubrics</td>
<td>(SS) Standardized Self-Report Surveys</td>
</tr>
<tr>
<td>(CS) Case Studies</td>
<td>(FG) Focus Groups</td>
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<td>(AQ) Embedded Questions to Assignments</td>
<td>(XI) Exit Interviews</td>
</tr>
<tr>
<td>(ST) Standardized Achievement Tests</td>
<td>(IN) Interviews</td>
</tr>
<tr>
<td>(OQ) Objective Exam Questions</td>
<td>(SU) Surveys</td>
</tr>
<tr>
<td>(EQ) Locally developed essay questions</td>
<td>(CA) Classroom Assessment</td>
</tr>
<tr>
<td>(ES) Reflective Essays</td>
<td>Other</td>
</tr>
<tr>
<td>(CP) Collective Portfolios</td>
<td>(PR) Presentation</td>
</tr>
<tr>
<td>(OB) Observations</td>
<td></td>
</tr>
</tbody>
</table>
Evidence
The Course Assessment form and Assessment Worksheets are saved as evidence. Additionally, instructors are encouraged to keep samples of student work (names redacted.) This could include copies of exams, quizzes, group projects, or other work. All evidence is maintained in the course binder located in AH324E.

Saving the data offers instructors a significant amount of reference material when determining the best plans to improve course effectiveness, which improves overall program effectiveness. Data are often referred to during department/assessment meetings as talking points for generating new ideas.

This category is satisfactory and requires no changes at this time
Curriculum

The aviation program’s curriculum is established and modified based on continual assessment of student learning. What follows is a description of the curriculum process based on assessments:

Timeline

Program faculty meet regularly for review and discussion about curriculum, outcomes, competencies, and assessment. With the completion of each semester, an assessment meeting is conducted to review assessment evaluations of program courses.

Focused assessment meetings and workshops are also scheduled each semester at the departmental and College level, and time is set aside in faculty workload and scheduling (by the college) for faculty to participate in these meetings and workshops.

This category is satisfactory and requires no changes at this time
Assessment Results

At these meetings collected student work is evaluated to determine if learning objectives and general outcomes are being realized, and new assessment techniques, policies, and tools are explored. When needed, the COE OAR will attend to provide assessment support, training, and assistance.

1) Student work is frequently collected electronically by instructors, through the MnSCU learning management system, Desire2Learn (D2L). This material is stored on a secure server and sampled for assessment purposes.

2) Student work is also collected in paper form by instructors, through classroom interaction. This material is stored in a secure cabinet in the instructor office and sampled for assessment purposes.

This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

- Not all instructors use D2L (not required.) Add “or another means” to #1 above.
Addressing Shortcomings (Improving Effectiveness)

Program review and assessment reporting (program, college and institutional levels) is conducted at least annually using sampled data from identified courses.

1) Assessment results are used by the faculty to identify shortcomings and evaluate the effectiveness of specific courses, and the overall curriculum, in helping students reach the goals established in the program assessment plan.

2) Plans are established by the faculty for the revision of specific courses, the development of new courses, or the restructuring of the curriculum.

3) Assessment results are used to initiate changes, evaluate the impact of those changes, and determine the areas for future emphasis in faculty curriculum discussions.

This category is satisfactory and requires no changes at this time
Faculty and Staff

Following are the processes employed by the university and COE to assess faculty and staff effectiveness:

Timeline

Faculty are assessed throughout the year at faculty meetings and semi-annual College of Education Professional Development meetings with the COE Dean. As required, appropriate Faculty are assessed for reappointment, promotion, and tenure each late fall semester.

1) IAW with the union contract mandated schedule, faculty are appropriately assessed each fall/spring (as scheduled) through the Article 22 Professional Development Plan (PDP) / Professional Development Report (PDR) process and the submission of annual reports.

2) Faculty teaching is evaluated each semester through course MSU generated course evaluations, which may be completed in hard copy or electronically.

This category is satisfactory and requires no changes at this time
Assessment Results

Data and evidence are collected from faculty members; the PDP/PDR process requires supporting evidence to be submitted. PDP/PDR data include an updated CV and evidence of productivity and accomplishments in the areas of teaching, scholarly activity, preparation, contribution to student growth, and service. COE and MSU annual report data also include contributions and competency in these same areas.

The assessment of faculty performance is driven by continuous improvement. Assessment results are used by the Aviation Program Coordinator, the Dean, and MSU Academic Affairs to evaluate faculty for re-appointment, promotion, tenure, and teaching load adjustments. Faculty are guided by the Aviation Program Coordinator and the Dean regarding teaching issues, and by the Dean, and MSU Academic Affairs (as needed) regarding re-appointment, tenure, and promotion issues.

**This category is satisfactory and requires no changes at this time**
Addressing Shortcomings (Improving Effectiveness)

Assessment results are used to address shortcomings, and to enhance teaching, research, preparation, contribution to student growth, and service. The results (and feedback) are growth and improvement oriented, and often result in additional resources (training, stipend, Faculty Improvement Grants, Technology grants (for online teaching/course preparation) being made available to faculty.

Additionally, assessment results (and the subsequent dialogue) are valuable resources and motivation to gain institutional support and funding for new initiatives, such as additional Telepresence teaching rooms (fall, 2012, fall 2014), additional and enhanced computer labs (fall 2013), and an on-campus jet flight simulator (spring 2014).

This category is satisfactory and requires no changes at this time
Facilities, Equipment and Services

Following are the processes employed by the department to assess the effectiveness of facilities, equipment, and services:

Timeline

The Aviation Program’s facilities and equipment are assessed on an ongoing basis by the Program Coordinator with input from faculty, North Star instructor pilots, and North Star management at regularly scheduled meetings, and informally from students and staff throughout the year. Assessment is also conducted by the COE Technology Committee. Concerns and complaints are collected from faculty, students, and staff.

This category is satisfactory and requires no changes at this time
Assessment Results

If facility or equipment challenges emerge, the program addresses them by:

1) Identifying classroom availability issues to the scheduling office
2) Identifying classroom maintenance issues to the facilities maintenance office
3) Identifying computer issues to campus ITS helpdesk
4) Identifying instructional equipment issues to campus ITS helpdesk
5) Identifying specialized program equipment issues to North Star Aviation
6) Identifying airport infrastructure issues to the city of Mankato.

The program coordinator sits on the Mankato Airport Improvement Advisory Board. This board is working with an architectural firm to develop long-range improvements to the airport main terminal building as well as the other operating surface areas of the airport. Several design concepts have been proposed to improve the operating space of the MSU flight training area.

The university processes for identifying, reporting, and resolving issues have been effective and have ensured that the facilities and equipment meet program needs.

This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

- Need to strengthen contracts with providers such as North Star to include more faculty input/oversight regarding equipment, such as aircraft.
Institutional Structure and Support

Minnesota State University, Mankato conducts student learning and program assessment through the Office of Institutional Research, Planning, & Assessment (IRPA), headed by Associate Vice President Dr. Lynn Akey. All institutional assessment activities are housed within this unit.

The specific assessment processes related to student learning and engagement are coordinated and managed by the University Assessment Coordinator (UAC), Dr. Paul Mackie. This is a full-time position dedicated to providing ongoing assessment and evaluation support and services to all academic and co-curricular departments and programs.

Through the dedicated physical space of the Center for Excellence and Innovation, the UAC provides a variety of services to the university community each semester, which includes ongoing training on assessing student learning at the department/program levels as well as for instructors at the classroom level. All faculty members and department/program directors/chairs are encouraged to attend these training sessions. In addition, the UAC offers additional workshops, brown bag discussion groups, and individual consultations to address student and program assessment issues, questions, and concerns.

This category is satisfactory; however, aviation faculty members recommend the following changes to the process:

- Need a stronger process for addressing support issues unique to the aviation department (e.g. Financial Aid)
Timeline

At a minimum, student learning and program assessment processes occur annually and all departments/programs are expected to participate. Each department/program conducts learning assessments based on unique needs, goals, and expectations as defined by their faculty members and when appropriate, discipline-specific accreditation standards. Departments/programs are expected to develop policies addressing how student learning and program assessment processes are conducted. For example, how many students (all in program, a percentage of population, at specific times during students' time in program) are expected to be defined by members of the department/program. Department/program faculty members are also expected to establish or otherwise articulate measurable levels of competency for learning outcomes.

Once gathered and calculated, these data are reported to department faculty members, the Department Chair, college Dean, and University Assessment Coordinator. Departmental assessment reports are due to the Department Chair, college Dean, and University Assessment Coordinator during the fall semester each year. The UAC reviews all reports and provides written feedback to the department and the Dean regarding the quality of the information, completeness of the document, and when appropriate, offers suggestions for improvement in future assessment processes. Data collected is directly from students, and focuses on assessing student learning, knowledge, and skills. Depending on department expectations and accreditation standards, data may be grounded in quantitative or qualitative methods.

This category is satisfactory and requires no changes at this time
Assessment Results

Results from assessment activities are primarily utilized at the department/program level, though a copy of the final report is submitted to the IRPA office where the UAC conducts an external evaluation and review of the data and report. When completed, the UAC review of the assessment data and report is submitted to the Office of Provost as well as returned to the department/program Chair/Director. These data are integrated into the University student learning objectives as well as reported to the regional accrediting body (the Higher Learning Commission). Because there is an expectation that competencies be defined and measureable, departments/programs are able to identify areas of strengths as well as shortcomings among competencies being evaluated. When shortcomings are identified, it is expected that corrective responses be developed and implemented in future reports. Successes are expected to be celebrated and applied as evidence of quality work.

This category is satisfactory and requires no changes at this time
Addressing Shortcomings (Improving Effectiveness)

Student learning and program assessment processes at Minnesota State Mankato are designed to assist departments/programs in effectively identify areas of strengths and weaknesses in student learning and throughout curriculum. Because departments/programs are expected to show specific competency expectations, areas of shortcomings are identified when students show below-competency scores, skills, knowledge, or abilities (as appropriate per situation or discipline).

Department/program faculty in consultation with the Department Chair, members of the IRPA office, and their college Dean are expected to address shortcomings and develop responses to remedy the area(s) of concern. A plan for addressing concerns is developed in the final annual assessment report and outlines potential solutions to address the area of concern.

This category is satisfactory and requires no changes at this time.
Aviation Safety Culture and Program

Following are the processes employed by the department to assess the effectiveness of its safety culture and program:

1) The MSU aviation safety program is under constant assessment and evaluation. If confidential safety reports are received, either from the secure lock box at the airport, or from the electronic reporting method, they are reviewed promptly by the Chief Instructor Pilot in collaboration with the Safety Faculty member and Program Coordinator.
   a. If the safety issue is not of a serious or critical nature, notification will be sent to all instructor pilots to brief their students on the issue in question and the resolution of that issue. The confidential safety report will be reviewed at the next Safety Review Board meeting.
   b. If the safety issue is of a serious or critical nature, new procedures, rules, directives, or guidelines will be discussed and developed by the Chief Instructor Pilot in collaboration with the MSU Safety Faculty member and program coordinator. These in turn, are communicated to the instructor pilots and students for immediate briefing and implementation. The confidential safety report and the action it precipitated will be reviewed at the next Safety Review Board meeting.

2) Monitoring of the students and instructor pilots during flight briefings and de-briefings also reveal the extent to which safety is tied to the day to day flying routines and maneuvers. On-the-spot discussion usually brings the safety aspects into more clarity—for both the student and instructor pilot.

3) The FAA designated examiners record all debrief items on every checkride. A comprehensive review of these write-ups provides a broad picture to identify trends or a particular lapse in instruction in certain areas, or with a particular instructor pilot. The program managers can respond to this information with appropriate retraining, emphasis in instructor meetings, and reminders in the flight safety meetings or publications.

This category is satisfactory and requires no changes at this time
Relations with Industry

Following are the processes employed by the department to assess the effectiveness of its relations with industry:

1) Assessment of the MSU Aviation Program’s relations with industry is an on-going and active process. Although the MSU Industry Advisory Board meets only a few times a year, the department maintains good communication ties with most members of the board for guest lectures, practice interview sessions, career preparation seminars, and industry trends. Input and feedback from the Industry Advisory Board is a valued resource for the program.

2) Internships are ongoing opportunities available every semester. The aviation program sponsors several regional airline internships, which students may compete for each semester. The feedback from the internships – both airline and other aviation related organizations – is important to assess the student’s preparedness as well as program’s on-going relationship with that company.

3) The aviation program also interfaces with the campus Career Development Center (CDC) to ensure any aviation internship opportunity is also advertised through their network as well. Close coordination with the CDC has helped the members of that organization better understand the unique nature of airline resumes, airline interviews, etc. to better assist those aviation student who choose to use that service on a regular basis. The CDC normally does a short presentation at every new fall flight orientation briefing for in-coming students.

This category is satisfactory and requires no changes at this time