

**Major/Program of Study Assessment Report  
Rocky Mountain College (updated 3/25/19)**

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**Major/Program of Study:** Aeronautical Science

**Academic Year:** 2022-2023

**Date Submitted:** May 5, 2023

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**Note:** All rubrics are based on 4 point scale. See document “Rubric for Major/Program of Study Assessment Report”  
 1-6 are AABI CORE Outcomes.  
 7-17 are AABI General Outcomes  
 18 is AABI Program Criteria  
 19 is other criteria.

Sample sizes

Senior/Exit interview: 20  
 AVS 405: 24  
 Internship eval: 21  
 CRM LOFT: 20  
 AVS 400 interview and ethics paper: 25  
 AVS 312 Aviation Law: 35  
 AVS 308 Safety: 31

Student Learning Outcome	Evaluation Methods/Tools (include course number)	Performance Standard	Assessment Results (include sample size and averages)	Recommendations: Intended Use of Results
1. Graduates will demonstrate attributes of an aviation professional, career planning and understanding of certification.	Feedback from “outsider” aviation professional conducting mock interviews of seniors in AVS 400 course, a capstone course.	3.0 score on AVS 400 interview (rubric)	3.1 on interview	Feedback from graduates remains strong. This is in our mission statement and certainly one of the greatest strengths of the program. We must continue to model

	<p>Internship supervisor eval</p> <p>Senior exit survey</p> <p>Informal feedback from graduates</p>	<p>3.0 score on internship eval</p> <p>3.0 score on exit survey</p> <p>Overall positive</p>	<p>3.9 on internship eval</p> <p>3.9 on exit survey 3.4 on exit survey for career planning</p> <p>Overall very positive</p>	<p>professionalism and take the time to give students the feedback they need. A couple of interviews in AVS 400 were weak—continued focus in that class. Professionalism was tied as #1 positive response out of 20 on senior survey—awesome!</p>
<p>2. Graduates will demonstrate understanding of aircraft design, performance, operating characteristics and maintenance.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.5 CRM LOFT</p> <p>3.9 on internship eval</p> <p>3.7 on exit survey</p>	<p>Strong. Internship supervisor evals are particularly strong from companies that have serious aircraft operations.</p>
<p>3. Graduates will demonstrate understanding of aviation operations in terms of aviation safety and human factors.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.5 CRM LOFT</p> <p>3.8 on internship eval</p> <p>3.8 on exit survey</p>	<p>Safety remains a great strength of the program. No change other than the continued evolution of safety. Comments on senior survey often highlight safety as their #1 area where program exceeded expectations. New Aviation Safety Directors starts work Aug 2023. Focus will be on</p>

				a good handoff. Previous Director will still be on staff.
4. Graduates will demonstrate understanding of national and international aviation law, regulations and labor issues.	<p>AVS 312 Aviation Law tests: International law - chapters 1, 8, and 15. National law - chapters 4, 5, 6, 7, 11, 13, and 14. Regulations - chapters 2, 3, 9, 10, 12, Labor - chapters 16 and 17.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>75% average AVS 312 chapter tests on contemporary issues. 3.0 from AVS 312 professor.</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>(90%) 3.6 in AVS 312.</p> <p>3.7 on internship eval</p> <p>3.6 on exit survey</p>	<p>Topics covered in class from both the text and expertise of the professor include ICAO, treaties and the “practical” side of Aviation Law, and labor law. The professor, unfortunately, is leaving. Focus will be on again getting an attorney to teach AVS 312.</p>
5. Graduates will demonstrate understanding of design and operations of airports, airspace, and the air traffic control system.	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.6 CRM LOFT</p> <p>3.9 on internship eval</p> <p>3.8 on exit survey</p>	<p>Professor in AVS 203 ATC continues to improve the course and develop teaching skills. No turnover expected, which is huge.</p>

<p>6. Graduates will demonstrate understanding of meteorology and environmental issues.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.6 CRM LOFT</p> <p>3.9 on internship eval</p> <p>3.5 on exit survey</p>	<p>Seasoned professor continues teaching AVS 150. Application in AVS 404 is strong and steady.</p>
<p>7. Graduates will apply mathematics, science, and applied sciences to aviation related disciplines.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.6 CRM LOFT</p> <p>3.8 on internship eval</p> <p>3.6 on exit survey</p>	<p>Exit survey improved for second year in a row. Requirement for MAT 131, which is unique for AVS students, is solid. Feedback from MAT professor is strong for that course.</p>
<p>8. Graduates will analyze and interpret data.</p>	<p>AVS 405 Air Transportation Management airline simulation evaluation</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score AVS 405 evaluation tool (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.3 AVS 405 eval</p> <p>3.8 on internship eval</p> <p>3.6 on exit survey</p>	<p>AVS 405 evaluation is up and others are steady. Trend is positive. Internship evals remain very strong. No change.</p>
<p>9. Graduates will work effectively on multi-disciplinary and diverse teams.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>AVS 405 Air Transportation Management airline simulation evaluation</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 score AVS 405 evaluation tool (rubric)</p>	<p>3.6 CRM LOFT</p> <p>3.85 AVS 405 eval</p>	<p>Better. AVS 405 is up and CRM is up. These are our best assessment tools. The ultimate team for an aeronautical science major is a crew, which is strong.</p>

	<p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.8 on internship eval</p> <p>3.5 on exit survey</p>	
<p>10. Graduates will make professional and ethical decisions.</p>	<p>Ethics paper, AVS 400</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 on ethics paper</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.6 on ethics paper</p> <p>3.8 on internship eval</p> <p>3.9 on exit survey</p>	<p>Strong. No change. Very strong scores by internship supervisors remains encouraging. Ethics was tied for #1 positive response out of 20 on senior exit survey. Awesome!</p>
<p>11. Graduates will communicate effectively, using both written and oral communication skills.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>AVS 405 Air Transportation Management airline simulation evaluation</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p> <p>Oral presentation AVS 308</p>	<p>WRITTEN:</p> <p>3.0 score AVS 405 evaluation tool (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p> <p>ORAL:</p> <p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p> <p>3.0 on AVS 308 presentation</p>	<p>WRITTEN:</p> <p>4.0 AVS 405 eval</p> <p>3.7 on internship eval</p> <p>3.8 on exit survey</p> <p>ORAL:</p> <p>3.4 CRM LOFT</p> <p>3.5 on internship eval oral</p> <p>3.8 on exit survey</p> <p>3.5 AVS 308 presentation</p>	<p>Writing remains strong but can always improve. Exit survey shows confidence in writing.</p> <p>Oral communication in CRM is steady, which is probably our most important assessment tool since that is what they will do after graduation—for a career. We must continue to emphasize this type of oral communication. Formal briefing skills in AVS 308 are down slightly. Public speaking in class needs to be continuously emphasized.</p>
<p>12. Graduates will engage in and recognize</p>	<p>Internship supervisor eval</p>	<p>3.0 on internship eval</p>	<p>3.8 on internship eval</p>	<p>Internship supervisors continue to give strong</p>

the need for life-long learning.	Senior exit survey	3.0 score exit survey	3.8 on exit survey	assessment which in encouraging. Students lean into on-the-job learning. Overall assessment is up.
13. Graduates will assess contemporary issues.	AVS 312 Aviation Law tests.  Senior exit survey	75% average AVS 312 chapter tests on contemporary issues. 3.0 from AVS 312 professor.  3.0 score exit survey	(90%) 3.6 in AVS 312.  3.5 on exit survey	Topics covered and assessed included many in the daily news. New professor in AVS 312 will need to be encouraged in this area.
14. Graduates will use the techniques, skills, and modern technology necessary for professional practice.	Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.  AVS 405 Air Transportation Management airline simulation evaluation  Internship supervisor eval  Senior exit survey	3.0 score on topic from LOFT instructor (rubric)  3.0 score AVS 405 evaluation tool (rubric)  3.0 on internship eval  3.0 score exit survey	3.5 CRM LOFT  3.69 AVS 405 eval  3.8 on internship eval  3.8 on exit survey	Still strong. AVS 405 is up. Many students take AVS 447 and AVS 449 which are computer based advanced aircraft systems courses. Still awaiting new software for AVS 449. New glass aircraft in the fleet is making this stronger.
15. Graduates will assess the national and international aviation environment.	AVS 312 Aviation Law chapter test.  Senior exit survey	75% average AVS 312 chapter tests  3.0 score exit survey	(100%) 4.0 in AVS 312.  3.5 on exit survey	Constitutional underpinnings are part of many class discussions. Students are strong in knowledge of both environments.

<p>16. Graduates will apply pertinent knowledge in identifying and solving problems.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>AVS 405 Air Transportation Management airline simulation evaluation Senior exit survey</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>3.0 score AVS 405 evaluation tool (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.5 CRM LOFT</p> <p>3.76 AVS 405 eval</p> <p>3.8 on internship eval</p> <p>3.8 on exit survey</p>	<p>Results are up in all areas assessed. No change necessary.</p>
<p>17. Graduates will apply knowledge of business sustainability to aviation issues.</p>	<p>AVS 405 Air Transportation Management airline simulation evaluation</p> <p>Internship supervisor eval</p> <p>Senior exit survey</p>	<p>3.0 score AVS 405 evaluation tool (rubric)</p> <p>3.0 on internship eval</p> <p>3.0 score exit survey</p>	<p>3.31 AVS 405 eval</p> <p>3.8 on internship eval</p> <p>3.2 on exit survey</p>	<p>Slight decrease in exit survey. Monitor. Enrollment by pilots in AVS 307 and AVS 310 electives is solid, but could perhaps use some more encouragement.</p>
<p>18. Graduates will meet FAA commercial pilot standards, with instrument and multi-engine ratings and demonstrate the ability to operate in a crew environment.</p>	<p>Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.</p> <p>Check ride pass rates.</p> <p>FAA written exam pass rates.</p>	<p>3.0 score on topic from LOFT instructor (rubric)</p> <p>85% pass rate, all syllabi</p> <p>85% written test pass rate</p>	<p>3.5 CRM LOFT</p> <p>100% of graduating seniors have passed all 4 required check rides.</p> <p>Private: 82%</p> <p>Instrument: 60%</p> <p>Commercial: 81%</p> <p>Multi Engine: 92%</p> <p>Written Test Pass Rate:</p>	<p>Private check ride pass rate is up significantly, from 56% to 82%. The other are little change. Written pass rates are steady. A new Cessna in the fleet this year helps flying continuity for some students. Check pilot standardization is strong and will be an area of emphasis as will Flight Instruction Continuation</p>

	Senior exit survey	3.0 score exit survey	Private: 88% Instrument: 98% Commercial: 98%  3.9 on exit survey	Training, as the instructor force becomes less experienced.  Overall pass rate meets FAA standards BUT we need to watch closely going forward.
19. Graduates will demonstrate knowledge and application of aerodynamic principles.	Score from LOFT flights in AVS 404 CRM conducted by former airline pilot.  Senior exit survey	3.0 score on topic from LOFT instructor (rubric)  3.0 score exit survey	3.5 CRM LOFT  3.7 on exit survey	Difficult to assess in the required curriculum because the great majority of graduates take AVS 410 Advanced Aero, an elective. But just that fact is an indicator of a desire to learn more, which they do.

Evaluation metrics:

1. Please include a copy of any rubric(s) that were used to evaluate student data
2. Please provide rationale for the performance standard/benchmark stated above.

In terms of the achievement of student learning outcomes:

1. What are your program's principal strengths?

We hired a new professor to start in August 2023 who will be half-time Safety Director. Though we still need at least another half time professor due to program growth, this is very good news.

Safety culture remains a great strength as does professionalism. Though difficult to measure, graduates give professional high marks when assessing their time at RMC.

We purchased a new Piper aircraft that was delivered in March 2023. We have established with the College a fund to collect money for future new aircraft, which we have not done in the past. We have plans to purchase two new aircraft by the end of FY 2024 which has support from



College leadership. Enrollment is at capacity and new aircraft will help us recruit and retain as many students as possible, which of course is good for the college as a whole. The Aviation Program again remains the largest academic program at RMC in terms of numbers of students enrolled.

Our best asset is the relationship between the Aviation Program and RMC in general. We must continue to market the well-rounded education, based in the liberal arts. Our key focus needs to remain the opportunity our students have to be both well prepared for strong careers and get a strong liberal arts education. The most unique and most important draw to our program is the college itself.

**Strengths looking forward:** One particular strength of our program is we do not specifically direct graduates/pilots to careers with the airlines. We do have four formal Bridge Programs with airlines (SkyWest, Horizon, Cape Air, Republic). We could have more but we limit it to four to maintain personal relationships. About 60% of our graduates do go to the airlines, though that number has dropped very significantly because of COVID. But it will rebound. Still, it continues to be wise to expose our students to many different types of careers, including in Aviation Management. We have this year established formal relationships with Alpine Air Cargo and Bridger Aerospace fire fighting.

The Safety Program is a tremendous strength for the overall Aviation Program. In addition to making our operations safer on a day-to-day basis, it develops all of our students, including aviation management majors, as aviation professionals and truly develops them for their careers.

2. How might you help assure that those strengths are maintained?

Continue hiring the right people who fit our professional culture. This will require increases in pay particular as the industry continues to dramatically increase pay in the face of the pilot shortage.

Continue open, continuous communication between all parts of the program.

Train well our new Aviation Safety Director, arriving in August 2023.

3. What are the program's principal challenges?

External Environment

The world-wide pilot shortage is a serious concern for us. This year we have enough CFI applicants. A smaller freshmen class allowed us to push more students through flight training faster giving us more candidates sooner. CFI manning is healthy now, but we anticipate this could be a problem area within a year because of demand for pilots. We must continue to get them through CFI training as quickly as possible. Some do leave us before they have 1000 hours because of opportunities the Part 135 world.

Feedback from graduates continues to tell us our focus on a well-rounded education and the liberal arts and critical thinking are the right areas to focus. Overly focusing on one segment of the industry, such as the airlines as is common and many other collegiate aviation programs, is too narrow and risky. We continue to get feedback from the industry about what the best kind of training is and in what type of planes to give our graduates the most options in their careers.

Internal Environment

- Fleet Replacement and employee pay.

- Students: Continue to practice the process of admitting the highest number of new freshmen while maintaining flight training standards and on-time graduation rates. We are at capacity now.
- Relations with Industry: Development and re-energization of the Industry Advisory Committee needs to be complete this coming year.
- Establishment of a fund for future aircraft purchase has allowed us to secure donations that were not available in the past.
- Our Women in Aviation, International Chapter has taken on new life, particularly thanks to outside support from former Westminster College WAI professional.

4. What programmatic/curricular changes are planned for addressing these challenges, and what is the implementation timeline?

Purchase two new Piper 100i aircraft for deliver at end of FY 2014.

Some shorter terms plan for improvement include:

Flight Operations

- Fleet Replacement Pla—two new planes in next two year.

Aviation Campus Program

- Hire one more professor in next two year.

Data in 5 – 10 years:

- Entering class each fall of 65 students.
- Retention of 70% or better between freshmen and sophomore years
- Graduation class of 35 each year
- Maintain enrollment of no more than 15% - 20% of the college

Please indicate where your assessment artifacts are stored:

I submit my artifacts to the assessment committee

I keep hard copy artifacts stored in my office

Other: \_\_\_\_\_

Changes to your program's curriculum (optional)

1. Have you added or revised your learning outcomes since last year's program assessment? If so, please indicate which outcomes have been revised and which outcomes have been added or removed.

No.

2. Have you made changes to the program's mission since last year's assessment? If so, please post the new mission statement here.

No