

I. Aviation Maintenance Program Description

During the freshman and sophomore years, students in the Aviation Technology Maintenance Management (ATMM) major will complete most of the courses required for the Federal Aviation Administration (FAA) Airframe and Powerplant (A&P) licenses. Students will also take advanced turbine engines, aviation law, and composites structures. Management and communications courses are incorporated into the program to provide essential business skills. Industry internships are available and encouraged in the junior and senior years. This major prepares students for entry-level positions in management and maintenance programs within the airline industry, corporate aviation, and general aviation. The FAA approved airframe and powerplant (A&P) curricula form the basis for this degree, and most positions will require the A&P licenses. Employment opportunities include:

- Positions with major airlines as maintenance personnel
- Maintenance supervisors
- Fixed-base operators
- Maintenance directors
- Repair station managers
- FAA inspectors
- Aircraft powerplant, and component manufacturers, as well as aerospace manufacturers
- Manufacturing engineers for aircraft producers such as Boeing, Airbus, Cessna, Bombardier, Lockheed Martin, and NASA

These industries are expanding at a rapid rate with excellent employment opportunities. This is forecast to continue well into the twenty-first century.

II. Degrees and Emphasis Options

The program offers students the Bachelor of Science (BS) in Aviation Technology Maintenance Management. By taking a few additional classes students can, and are encouraged to, earn a Management minor which will further increase their career opportunities.

III. Program Mission

The mission of the Utah State University Aviation Program is to prepare, educate and enhance the professional development of student's industry skills, attitudes and knowledge of aircraft maintenance, management, utilizing instructional excellence and experience in real world aviation. The synergy of dual curricula in professional pilot and maintenance management will prepare team leaders with diverse, industry-ready skills. Our courses are aligned with the Federal Aviation Administration's (FAA) Part 147 requirements as a guide to help students earn their Airframe and Power plant (A&P) licenses.

IV. Alignment of Program Mission with Department Mission

The ATMM program mirrors the ASTE department's philosophy by utilizing the same methods of learning, discovery and engagement with an interdisciplinary systems science approach. This approach facilitates the efficient development of the knowledge and skills in our students that meet and exceed the FAA's requirements for Aviation Maintenance Technician Airframe & Powerplant licensing. Further education in airline operations, business and management disciplines prepares our students to excel in their careers and become leaders in the aviation industries, as well as related disciplines outside of aviation.

V. Program Goals

1. Each student will pass the FAA written exams with a 90% or better.
2. Each student will obtain an FAA airframe and power plant license.
3. Each graduating student will be familiar with career opportunities and have a clear career goal and pathway.

VI. Aviation Maintenance Learning Objectives

1. Demonstrate knowledge proficiency of the following fundamental technical areas to the level of FAA licensing requirements:
 - a. Aerodynamics and how to maintain or design those features in aircraft
 - b. Aircraft systems and components and how they operate, troubleshooting and repair
 - c. Aircraft structures, their purpose, design and strengths.
 - d. Aircraft powerplants including their operation, troubleshooting and repair
2. Perform the skills, techniques and accepted practices necessary for aircraft and aircraft component manufacturing, maintenance, repair, overhaul and airworthiness determination.
3. Develop an attitude of lifelong learning to stay current with FAA regulations, changing laws, current events and technological advancements such as utilization of aircraft composites.
4. Develop skills and abilities for oral and written communication at a professional level.
5. Utilize teamwork, business management, and leadership skills necessary for employment in the professional aviation industry

Assessment Plan:

During the freshman and sophomore years, students in the Aviation Technology Maintenance Management (ATMM) major will complete most of the courses required for the Federal Aviation Administration (FAA) Airframe and Powerplant (A&P) licenses. Students will also take advanced turbine engines, aviation law, and composites structures. Management and communications courses are incorporated into the program to provide essential business skills. Industry internships are available and encouraged in the junior and senior years. Students take FAA written and practical tests to earn their airframe and powerplant licenses. This major prepares students for entry-level positions in management and maintenance programs within the airline industry, corporate aviation, and general aviation. The FAA approved airframe and powerplant (A&P) curricula form the basis for this degree, and most positions will require the A&P licenses. Program assessment is completed through the following methods:

To assess the learning objective 1) demonstrate knowledge proficiency of the following fundamental technical areas to the level of FAA licensing requirements:

- Students will be given a sample knowledge test in their freshman year to measure their incoming knowledge base. We will compare their exit tests to measure their improvement and see where additional instruction may be needed.
- In the student's senior year they will be required to pass the FAA knowledge tests with a score of 90%.
- Students will be assessed on their ability to pass the FAA practical test required for licensing.
- The Federal Aviation Administration annually inspects our curriculum to assure it meets or exceeds FAR Part 147 requirements.

To assess the learning objective 2) perform the skills, techniques and accepted practices necessary for aircraft and aircraft component manufacturing, maintenance, repair, overhaul and airworthiness determination:

- Individual classes will be assessed on their effectiveness in reaching program objectives. When students take their FAA knowledge tests, we can identify what areas they are deficient in by observing their written test results. The courses that prepare students for the tests are: AV1170, 1240, 2180, 2200, 2170, 2190, 2420, 2430, 2440, 4490, 2140, 2150, 2100, 2110, 4200, and 3280.

To assess the learning objectives 3) develop an attitude of lifelong learning to stay current with FAA regulations, changing laws, current events and technological advancements such as utilization of aircraft composites & 4) utilize teamwork, business management, and leadership skills necessary for employment in the professional aviation industry:

- Students will complete a senior design project and may choose to an internship. Employers of these internships will be surveyed to find strengths and weaknesses within the curriculum.

Utah State University

Cooperative Education Internship Agreement

Student Name _____ Major _____ A# _____

On-Campus E-mail: _____ Office E-mail _____

Street Address _____ City _____ State _____ Zip _____

Telephone: Home _____ Work _____ Course Number _____

Faculty Co-op Coordinator Name _____ Campus Phone _____

Company/Business _____ Immediate Supervisor's Name _____

Work Address _____ City _____ State _____ Zip _____

Rate of Pay _____ Hours worked weekly _____ Supervisor's Work Phone _____

Semester Enrolled: Fall Spring Summer Year _____

Work Schedule: _____
 Monday Tuesday Wednesday Thursday Friday

Statement of Student's Learning Objectives

You will be required to establish five learning objectives for the specified grading period. The learning objectives must be originated by you, the student, approved by the employer/supervisor, and reviewed by the department faculty co-op coordinator for validity and relative value with all parties in agreement.

ATTACH A COPY OF YOUR 5 LEARNING OBJECTIVES TO THIS FORM

Agreement

We, the undersigned, agree with the validity of the learning objectives listed above (or attached). The employer and the college agree to provide the necessary supervision and counseling to insure that the maximum educational benefit may be achieved from the student work experience. The student agrees to abide by the cooperative education guidelines as outlined in the Student Manual. The supervisor will evaluate the student's learning objectives and work performance at the end of the grading period. The university will award academic credit for successful accomplishment of the objectives in the cooperative education student manual.

Student

date Work Supervisor

date Faculty Coordinator

date

Student Name _____

form 2

Employer Evaluation of Learning Objectives

Instructions - Read Carefully

Please rate the employee according to how well he/she achieved each learning objective according to the following rating scale:

1 = Failed to meet minimum requirements

2 = Limited accomplishment

3 = Average or expected accomplishment

4 = Exceeds average performance

5 = Unique or outstanding performance

Please write/type learning objectives below or attach a sheet listing objectives.

Learning Objectives	Rating
1	
2	
3	
4	
5	

Supervisor's Signature _____ Date _____

Employer Evaluation of Student Performance

Instructions - Read Carefully

This rating sheet provides a practical method through which the ability of the individual can be judged with a reasonable degree of accuracy and uniformity. Indicate your opinion of this employee by placing a **X** on the phrase in the block which seems best to fit the employee. If you can't make up your mind between two phrases, place your **X** in the narrow space between two blocks. Please follow instructions carefully.

1. Use your own independent judgment.
2. Disregard your general impression of the employee and concentrate on one factor at a time.
3. When rating an employee, call to mind instances that are typical of his/her work and way of acting. Do not be influenced by UNUSUAL SITUATIONS which are not typical.
4. Make your rating with the utmost care and thought be sure it represents a fair and square opinion. **DO NOT ALLOW PERSONAL FEELING TO GOVERN YOUR RATING.**
5. After you have rated the employee on all factors, write at the bottom of the sheet any additional information about the employee which you feel has not been covered by the rating report, but which is essential to a fair appraisal.

Knowledge of work	Practically none	Below average	Acceptable knowledge	Somewhat above average	Well informed	Extremely well informed
Effect on Workers	Often breeds trouble and dissatisfaction	Sometimes causes dissension	No outstanding effects on co-workers	Better than average	Promotes cooperation and good will	Outstanding for loyalty and cooperation
Promptness	Always tardy	Must be reminded occasionally	Usually prompt	Never late without good excuse	Almost never late	Always prompt
Responsibility	Careless and negligent	Not very reliable	Accepts responsibility when asked	Accepts responsibility w/o being told	Accepts responsibility Above Average	Exceptionally reliable
Accuracy	Is highly inaccurate	Is often inaccurate	Makes occasional errors	Somewhat above average	Rarely makes mistakes	Never makes mistakes
Quantity of Work	Amount of work unsatisfactory	Turns out just enough To get by	Turns out fair amount	Always finishes allotted amount	Turns out more than average amount	Consistently outputs unusually large amount
Initiative	Must always be told what to do	Needs considerable supervision	Needs direction and help in some cases	Needs little supervision	Pushes work through on own initiative	Always finds extra work to do
Application	Indifferent and lazy	Tendency toward indifference	Average application	Interested and diligent	Puts extra effort into work	Works continuously and enthusiastically
Possibilities for promotion	None	Lacks some necessary traits	Good enough for present job	Improving self through study	Has great future possibilities	Is promotable now
Ability to handle public	Difficult personality	Likely to antagonize people	Hesitant and diffident	Pleasant and courteous	Ingenious and tactful	Unusual personality and aptitude

Overall Rating: Excellent Very Good Average Marginal Poor

Has this evaluation been discussed with the student? Yes No

Additional Information: _____

Supervisor Signature _____ Date _____

Student Name _____

form 4

Student Evaluation of Learning Objectives

Instructions - Read Carefully

Please rate the employee according to how well he/she achieved each learning objective according to the following rating scale:

1 = Failed to meet minimum requirements

2 = Limited accomplishment

3 = Average or expected accomplishment

4 = Exceeds average performance

5 = Unique or outstanding performance

Please write/type learning objectives below or attach a sheet listing objectives.

Learning Objectives	Rating
1	
2	
3	
4	
5	

Student's Signature _____ Date _____

Student Evaluation of Student Performance

Instructions - Read Carefully

This rating sheet provides a practical method through which the ability of the individual can be judged with a reasonable degree of accuracy and uniformity. Indicate your opinion of this employee by placing a **X** on the phrase in the block which seems best to fit the employee. If you can't make up your mind between two phrases, place your **X** in the narrow space between two blocks. Please follow instructions carefully.

- Use your own independent judgment.
- Disregard your general impression and concentrate on one factor at a time.
- When rating an yourself, call to mind instances that are typical of your work and way of acting. Do not be influenced by UNUSUAL SITUATIONS which are not typical.

Knowledge of work	Practically none	Below average	Acceptable knowledge	Somewhat above average	Well informed	Extremely well informed
Effect on Workers	Often breeds trouble and dissatisfaction	Sometimes causes dissension	No outstanding effects on co-workers	Better than average	Promotes cooperation and good will	Outstanding for loyalty and cooperation
Promptness	Always tardy	Must be reminded occasionally	Usually prompt	Never late without good excuse	Almost never late	Always prompt
Responsibility	Careless and negligent	Not very reliable	Accepts responsibility when asked	Accepts responsibility w/o being told	Accepts responsibility Above Average	Exceptionally reliable
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Quantity of Work	Amount of work unsatisfactory	Turns out just enough To get by	Turns out fair amount	Always finishes allotted amount	Turns out more than average amount	Consistently outputs unusually large amount
Initiative	Must always be told what to do	Needs considerable supervision	Needs direction and help in some cases	Needs little supervision	Pushes work through on own initiative	Always finds extra work to do
Application	Indifferent and lazy	Tendency toward indifference	Average application	Interested and diligent	Puts extra effort into work	Works continuously and enthusiastically
Possibilities for promotion	None	Lacks some necessary traits	Good enough for present job	Improving self through study	Has great future possibilities	Is promotable now
Ability to handle public	Difficult personality	Likely to antagonize people	Hesitant and diffident	Pleasant and courteous	Ingenious and tactful	Unusual personality and aptitude

Overall Rating: Excellent Very Good Average Marginal Poor

Time and Work Verification

In order to justify credit awarded, each student must verify the total number of hours worked. Complete the following:

Rate of Pay _____ Total Hours Worked _____ Total Wages Earned _____

Student Signature: _____ Date: _____

Confidential Student Evaluation of the Work Experience

Please type or print your responses to the following questions regarding your work experience during this past work period. Make additional comments if you wish. The purpose of the form is to provide opportunity for frank appraisal of the job location in the interests of the employer and future students.

Criteria	Excellent	Good	Average	Poor	Very Poor	No Observation
1. Work experience relates to field of study						
2. Adequacy of employer supervision						
3. Helpfulness of supervisor						
4. Cooperativeness of fellow workers						
5. Opportunity to use academic learning						
6. Opportunity to develop human relations skills						
7. Provided levels of responsibility consistent with student ability and growth						
8. Opportunity to develop communication skills						
9. Opportunity to develop creativity skills						
10. Opportunity to solve problems						
11. Opportunity to develop critical thinking skills						
12. Helpfulness of faculty coordinator						
13. Overall evaluation of Co-op experience						

14. Did you share this evaluation with your employer/supervisor? Yes No
15. Would you work for this organization again? Yes No
16. Would you recommend the Cooperative Education Internship Program to other students? Yes No
17. List ways you have benefited from this experience.

18. What did you learn about yourself, personally, as a result of this experience?

19. If you were to make one suggestion to improve the Cooperative Education Internship Program, what would it be?

20. Additional Comments:

Please email your responses to donna.crow@usu.edu or turn this form in with your final report.

Student Name _____ Student ID _____ Date _____

Major _____ Faculty Co-op Coordinator _____

Company/Business _____ Immediate Supervisor's Name _____

Work Address _____

To assess the learning objective 4) develop skills and abilities for oral and written communication at a professional level:

- Employers of graduating students will be surveyed to verify satisfaction of graduate's training and professionalism.

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Air Agency Certificate

Number GO3T534L

This certificate is issued to
UTAH STATE UNIVERSITY

whose business address is
APPLIED SCIENCES, TECHNOLOGY & EDUCATION DEPT.
2300 OLD MAIN HILL
LOGAN, UTAH 84322-6000

*upon finding that its organization complies in all respects
with the requirements of the Federal Aviation Regulations
relating to the establishment of an Air Agency, and is
empowered to operate an approved AVIATION MAINTENANCE*

TECHNICAL SCHOOL with the following ratings:

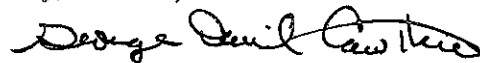
AIRFRAME
POWERPLANT
AIRFRAME & POWERPLANT

*This certificate, unless canceled, suspended, or revoked,
shall continue in effect INDEFINITELY.*

Date issued:

MAY 25, 1972
Reissued: July 15, 2014

By direction of the Administrator



G. DAVID CAWTHRA
MANAGER SLC-FSDO-07

**This Certificate is not Transferable, AND ANY MAJOR CHANGE IN THE BASIC FACILITIES, OR IN THE LOCATION THEREOF,
SHALL BE IMMEDIATELY REPORTED TO THE APPROPRIATE REGIONAL OFFICE OF THE FEDERAL AVIATION ADMINISTRATION**

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both

Strengths

- Excellent reputation in the aviation manufacturing, maintenance, repair, and overhaul industries with graduates in these career fields throughout the US and worldwide.
- Strong relations with numerous companies in Western and central U.S. seeking our graduates for employment.
- Strong international relations contributing to a more diverse international Aviation Maintenance student population.
- Extensive and diverse faculty experience and expertise within the aviation maintenance and flight industry contributing to real world training scenarios for our students.
- Our graduates are capable of securing employment in general aviation, commercial airlines, testing labs, NASA programs, aircraft manufactures, and many non-aviation companies due to the diversity of subject areas studied, and quality of training received.
- Our graduates typically secure higher compensation and have better job security than other comparable disciplines.
- Our faculty have developed and utilize creative methods of acquiring additional training aids with minimal financial burden.

Weaknesses

- Training and testing equipment is becoming antiquated and worn out, and as such do not accurately reflect standards or the latest technologies in the aviation industry.
- Instructors need to maintain currency with industry-specific maintenance and flight training to be able to teach the technologies found in aircraft reflective of the current aviation industry.
- Program name does not accurately reflect program professionalism, student capabilities and career path opportunities. Sometimes this is confusing or misleading to potential employers.
- Limited interaction with other aviation maintenance training academic institutions.
- The fact that USU has a Maintenance management program is not as widely known as similar programs among potential students, or aviation employers.

Recommendations

- Faculty should solicit and collaborate with aviation companies for donations of newer technologies. This may allow us to replace obsolete equipment in our curriculum with newer technologies.
- The ATMM faculty and students should participate in competitions, forums and magazines to increase our visibility in the aviation industry, with potential students, and future employers.
- The ATMM instructors should attend more professional conferences such as Aviation Technician Education Council as well as manufacturer and maintenance specific training.

- The aviation maintenance advisory board should be reconvened annually to ensure that the ATMM program continues to progress in a direction that will continue to prepare our graduates for successful careers the aviation industry.