1. **COURSE TITLE\*: Aircraft Operations & Preservation**
2. **CATALOG – PREFIX/COURSE NUMBER/COURSE SECTION\*: AVIT 1101**
3. **PREREQUISITE(S)\*: COREQUISITE(S)\*:**
4. **COURSE TIME/LOCATION/MODALITY: (*Course Syllabus – Individual Instructor Specific*)**
5. **CREDIT HOURS\*: 3 LECTURE HOURS\*: 2**

**LABORATORY HOURS\*: 1 (1.5 contact hours) OBSERVATION HOURS\*:**

1. **FACULTY CONTACT INFORMATION: *(Course Syllabus – Individual Instructor Specific)***
2. **COURSE DESCRIPTION\*:**

In this course the student will learn the proper way to move, receive and launch aircraft which will include taxiing, towing, tugging and marshalling. The student will learn how to service, fuel, oil and various other serviceable items. The student will also learn how to jack aircraft and how to perform weight and balance calculations. The course also covers Oxygen servicing, types of fires and extinguishing, types of oil and fuel, and servicing these items. Course covers aircraft drawings and blueprints.

1. **LEARNING OUTCOMES\*:**
2. Start, ground operate, move, service and secure aircraft
3. Identify and select proper fuels used in aircraft
4. Identify ground operation zones and hazardous areas around aircraft
5. Marshall an airplane
6. Jack and weigh aircraft
7. Perform complete weight and balance checks and record data
8. Identify and select aircraft cleaning materials
9. Identify different types of drawings and blueprints
10. **ADOPTED TEXT(S)\*:**

FAA-H-8083-30A (General)

Aviation Maintenance Technician Handbook 43.13-1B

<https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/amt_general_handbook.pdf>

<https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_43.13-1B_w-chg1.pdf>

**9a: SUPPLEMENTAL TEXTS APPROVED BY FULL TIME DEPARTMENTAL FACULTY (INSTRUCTOR MUST NOTIFY THE BOOKSTORE BEFORE THE TEXTBOOK ORDERING DEADLINE DATE PRIOR TO ADOPTION) \*\*\*.**

1. **OTHER REQUIRED MATERIALS: (SEE APPENDIX C FOR TECHNOLOGY REQUEST FORM.)\*\***
2. **GRADING SCALE\*\*\*:**

Grading will follow the policy in the catalog. The scale is as follows:

A: 90 – 100

B: 80 – 89

C: 70 – 79

D: 60 – 69

F: 0 – 59

1. **GRADING PROCEDURES OR ASSESSMENTS: (*Course Syllabus – Individual Instructor Specific)***

Test count – 40% of Final Grade

Quizzes count – 10% of Final Grade

Lab Grade counts – 50% of Final Grade

Class and lab attendance will be graded, two points will be deducted from the grade for each day missed. Quizzes cannot be made up. No test can be taken late without prior approval of the instructor.

1. **COURSE METHODOLOGY: *(Course Syllabus – Individual Instructor Specific)***

May included but not limited to lecture and problems solving, group and lab projects, in-class and home assignments, quizzes and tests. Lab project will be individual and group. Attendance to class and lab is required.

**14. COURSE OUTLINE: *(Course Syllabus – Individual Instructor Specific)***

***(Insert sample course outline with learning outcomes tied to assignments / topics.)***

**Below is an example of how you might fill-in the course outline of classwork, assignments, tests, et al…**

|  |  |  |
| --- | --- | --- |
| **WEEK** | **DESCRIPTION** | **LEARNING OUTCOMES** |
| WEEK 1 | Shop safety, safety around machines, compressed air safety, and material safety data sheets.  Fire safety, personal fire protection, classification of fires, types of fire extinguishers. | 1 |
| WEEK 2 | Jacking and hoisting aircraft, foreign object damage, safety around helicopters, aircraft tiedown and securing procedures. | 3, 5 |
| WEEK 3 | Aircraft engine start procedures, hand propping, turbine engine starts, hung starts, hot starts, taxiing aircraft, towing aircraft, marshalling aircraft. | 1, 4 |
| WEEK 4 | Quiz 1  Ground service equipment, electrical ground power units, hydraulic power units, servicing oxygen, aircraft fuels, aircraft fuel performance numbers, turbine fuels, fuel volatility, fuel and static electricity. | 1, 2, 3 |
| WEEK 5 | Fueling aircraft, fuel contamination control, turbine fuel contamination, fuel microbial growth, fuel surfactants, aircraft pressure fueling, defueling aircraft. | 2 |
| WEEK 6 | Aircraft weighing procedures, aircraft weight, aircraft weight limitations, center of gravity, aircraft loading aspects, aircraft datum, center of gravity positions. | 5, 6 |
| WEEK 7 | Test 1  Weight and balance principles, calculating weight and balance, preparation for weight and balance, equipment used for weighting aircraft, recording weight and balance data, locating the CG | 5, 6 |
| WEEK 8 | Mean aerodynamic cord, empty weight CG, loaded CG range, weight distribution, air taxiing loading (Part 135). | 6 |
| WEEK 9 | Shifting the CG, ballast, weight and balance change after alterations, adverse loading CG forward and rearward, maximum gross weight check, maximum land weight check. | 6 |
| WEEK 10 | Helicopter weight and balance, calculating weight and balance forward and aft, calculating lateral CG. | 5, 6 |
| WEEK 11 | Aircraft cleaning, exterior cleaning, non-metal cleaning, powerplant cleaning. | 7 |
| WEEK 12 | Test 2  Detailed drawings, assembly drawings, installation drawings, section drawings. | 8 |
| WEEK 13 | Block diagrams, flow charts, wiring diagrams.  Orthographic projection, isometric drawings, oblique drawings, perspective drawings. | 8 |
| WEEK 14 | Drawing lines and their meaning, dimensioning  Aircraft production drawings, basic sketching. | 8 |
| WEEK 15 | Nomograms, wiring chart, break-horsepower charts, fuel consumption charts, horsepower-altitude charts. | 8 |
| WEEK 16 | Final |  |

* + Shop safety, safety around machines, compressed air safety, and material safety data sheets.
  + Fire safety, personal fire protection, classification of fires, types of fire extinguishers.
  + Jacking and hoisting aircraft, foreign object damage, safety around helicopters, aircraft tiedown and securing procedures.
  + Aircraft engine start procedures, hand propping, turbine engine starts, hung starts, hot starts, taxiing aircraft, towing aircraft, marshalling aircraft.
  + Quiz 1
  + Ground service equipment, electrical ground power units, hydraulic power units, servicing oxygen, aircraft fuels, aircraft fuel performance numbers, turbine fuels, fuel volatility, fuel and static electricity.
  + Fueling aircraft, fuel contamination control, turbine fuel contamination, fuel microbial growth, fuel surfactants, aircraft pressure fueling, defueling aircraft.
  + Aircraft weighing procedures, aircraft weight, aircraft weight limitations, center of gravity, aircraft loading aspects, aircraft datum, center of gravity positions.
  + Test 1
  + Weight and balance principles, calculating weight and balance, preparation for weight and balance, equipment used for weighting aircraft, recording weight and balance data, locating the CG
  + Mean aerodynamic cord, empty weight CG, loaded CG range, weight distribution, air taxiing loading (Part 135).
  + Shifting the CG, ballast, weight and balance change after alterations, adverse loading CG forward and rearward, maximum gross weight check, maximum land weight check.
  + Helicopter weight and balance, calculating weight and balance forward and aft, calculating lateral CG.
  + Aircraft cleaning, exterior cleaning, non-metal cleaning, powerplant cleaning.
  + Test 2
  + Detailed drawings, assembly drawings, installation drawings, section drawings.
  + Block diagrams, flow charts, wiring diagrams.
  + Orthographic projection, isometric drawings, oblique drawings, perspective drawings.
  + Drawing lines and their meaning, dimensioning.
  + Aircraft production drawings, basic sketching.
  + Nomograms, wiring chart, break-horsepower charts, fuel consumption charts, horsepower-altitude charts.
  + Final

**15. SPECIFIC MANAGEMENT REQUIREMENTS\*\*\*:**

Class and lab attendance will be graded. Quizzes cannot be made up. No test can be taken late without prior approval of the instructor.

**16. FERPA:\***

Students need to understand that their work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**17. ACCOMMODATIONS: \***

Students requesting accommodations may contact Ryan Hall, Accessibility Coordinator at rhall21@sscc.edu or 937-393-3431, X 2604.

Students seeking a religious accommodation for absences permitted under Ohio’s Testing Your Faith Act must provide the instructor and the Academic Affairs office with written notice of the specific dates for which the student requires an accommodation and must do so no later than fourteen (14) days after the first day of instruction or fourteen (14) days before the dates of absence, whichever comes first. For more information about Religious Accommodations, contact Ryan Hall, Accessibility Coordinator at [rhall21@sscc.edu](mailto:rhall21@sscc.edu) or 937-393-3431 X 2604.

**18. OTHER INFORMATION\*\*\*:**

**SYLLABUS TEMPLATE KEY**

**\*** Item cannot be altered from that which is included in the master syllabus approved by the Curriculum Committee.

**\*\*** Any alteration or addition must be approved by the Curriculum Committee

**\*\*\*** Item should begin with language as approved in the master syllabus but may be added to at the discretion of the faculty member.