**Reedley College Aviation Maintenance Technology Program**

**AMT 11 (53090) Basic Electricity – Aircraft Propellers - Human Factors (Lecture) Fall 2016**

**Instructor:** Jason Asman e-mail: [jason.asman@reedleycollege.edu](mailto:jason.asman@reedleycollege.edu) Phone: 638-0300 ext.3243

**Office Hours:** Daily 8:30am – 9:00am Office Location: Aero 8

**Class Location:** Meets in Aero 5A & 5B

**Daily Schedule:** Lecture: 7:00am – 8:05am

**Holidays:** Labor Day – September 5th, Veterans Day – November 11th, Thanksgiving – November 24th – 25th.

**Important Dates:** Last date for a refund. – Aug. 26nd  Drop date to avoid a “W”. – Sept 2nd, Last day to drop. - Oct. 14th

**Course Advisories:** ENGL 126 and eligibility for ENGL 125 and MATH 201

**Course Co-requisites:** AMT 11, AMT 13, AMT 11L, AMT 12L, and AMT 13L.

**Course Objectives:** The purpose of this course is to meet a portion of the Federal Aviation Administration requirements for certification as an Aviation Maintenance Technician.

**Course Content:** This lecture course will cover topics such as: Basic electrical theory and the relationship of voltage, current, and resistance in electrical circuits; the inspection, servicing, and repair of fixed-pitch, constant speed, and feathering type propellers; and the investigation of factors that affect human performance in aviation maintenance.

**Course Outcomes:** Upon completion of this course, students will be able to express how to measure and calculate the properties of voltage, current, resistance, capacitance, inductance, and electrical power in A/C and D/C circuits. Read and interpret aircraft electrical circuit diagrams. Identify and categorize propeller types and propeller control systems. Demonstrate and communicate an understanding of the principles of fundamental human factors as they apply to aviation maintenance work environments. Employ various computer skills which will aid in the performance of maintenance tasks.

**Canceled Class Notification:** If an AMT class has to be cancelled, a cancellation notice will be placed on the classroom door. In addition, the cancelled class will be posted on the Reedley College website.

**Remind:** If you would like to receive email or text message alerts from your instructor regarding this course, you can sign up for AMT 11 remind messages using the *Remind* application on your smart phone or text messaging services. Please follow the instructions found on the *Remind* handout.

**Student Handbook:** The official Reedley College Student Handbook is a great resource that contains lots of valuable information a student may need during their time here at Reedley College. You can view this handbook online or download it as a .pdf file from the Reedley College website. The address is: <http://reedleycollege.edu/index.aspx?page=1443>.

**Final Exam:** A two-hour comprehensive final exam worth 20% of your total grade will be given at the end of the semester. You are required to take the final exam, however the final exam will not affect your FAA grade. Your final exam will be on December 12th.

**Required Textbooks:** These books are free to download in .pdf format here. <http://www.faa.gov/library/manuals/aircraft/>

1. U.S. Department of Transportation, Federal Aviation Administration. *Airframe & Powerplant Mechanics* ***General*** *Handbook*, FAA-H-8083-30ATB ed. Tabernash, CO: Aircraft Technical Book Company, 2014
2. U.S. Department of Transportation, Federal Aviation Administration. *Airframe & Powerplant Mechanics* ***Airframe******Handbook, Volume 1***, FAA-H-8083-31ATB ed. Tabernash, CO: Aircraft Technical Book Company, 2014
3. U.S. Department of Transportation Federal Aviation Administration. *Airframe & Powerplant Mechanics* ***Airframe Handbook, Volume 2***, FAA-H-8083-31 ed. Tabernash, CO: Aircraft Technical Book Company, 2016
4. U.S. Department of Transportation Federal Aviation Administration. *Airframe & Powerplant Mechanics* ***Powerplant*** *Handbook*, FAA-H-8083-32 ed. Tabernash, CO: Aircraft Technical Book Company, 2016
5. U.S. Dept. of Transportation, Federal Aviation Administration.. ***Advisory Circular AC43.13-1B/2B****, Acceptable Methods, Techniques, and Practices - Aircraft Inspection and repair*, 1B/2B ed. Aircraft Technical Book Co., 2009
6. U.S Dept of Transportation from Title 14 of the Code of Federal Regulation (14 CFR). ***FAR/AMT*, 2016** ed. Jeppesen Sanderson Inc., 2014

***Recommended* Textbooks:** Note: Airframe & Powerplant Mechanics Test Guides are *strongly* recommended.

1. Aircraft Technical Book Company. *Airframe & Powerplant Mechanics General Test Guide*, 1st. ed. Tabernash, CO: Aircraft Technical Book Company, 2016
2. Aircraft Technical Book Company. *Airframe & Powerplant Mechanics Airframe Test Guide*, 1st. ed. Tabernash, CO: Aircraft Technical Book Company, 2016
3. Aircraft Technical Book Company. *Airframe & Powerplant Mechanics Powerplant Test Guide*, 1st. ed. Tabernash, CO: Aircraft Technical Book Company, 2016
4. Wild, T., Leasyre, M.. *Aviation Maintenance Technician General Workbook*, ed. Tabernash, CO: Aircraft Technical Book Company, 2012
5. Sterkenburg, R.. *Airfframe & Powerplant Mechanics Airframe Workbook*, ed. Tabernash, CO: Aircraft Technical Book Company, 2012
6. Wild, T.. *Airframe & Powerplant Mechanics Powerplant Workbook*, ed. Tabernash, CO: Aircraft Technical Book Company, 2012

**Instructor Meetings:** You may need to meet with your instructor during the semester for various reasons. Instructors hold office hours for this purpose and welcome you to meet with them at that time. Your instructor’s office hours are posted outside of the office on the door. Be aware that this can be a busy time and you may have to wait while the instructor meets with other students. If you would like, you can schedule an appointment so you will not have to wait.

**Textbook Checks**: You are required to bring your textbook and note taking materials to class each day. There will be random “textbook checks” throughout the semester by your instructor. This check is equivalent to a quiz and points are awarded as appropriate. If you do not have your textbook (or electronic equivalent) in your possession at the moment the check is performed, you will not receive credit. Having your book in your locker will not count!

**Student Education Plan:**A Student Education Plan (SEP) is a plan detailing the coursework that is required to meet Reedley College certificate, graduation, or transfer requirements. An SEP must be completed by a Reedley College counselor. It will note the classes you have completed and the classes you still need to take. The SEP should include courses you have taken at other schools. You will be encouraged to complete an SEP sometime during this semester if you have not already completed one.

**Personal Supplies:** You are responsible for your own personal protective equipment (PPE). **Safety glasses and hearing protection will be required in the Aeronautics building lab**. Safety glasses will be worn at all times during the lab sessions. You will be required to wear hearing protection while operating or in close proximity to equipment that elevates the sound level. Closed toe shoes are required in the Aeronautics lab. A pair of light work gloves is also recommended for occasional use. You will also need a steel 6” machinist ruler. If you do not have your personal protective equipment with you, you will not be allowed to participate in the lab. We all occasionally forget to wear our PPE (I know I do), so please help each other out and remind each other if you see someone not wearing theirs (including the instructors).

**Locker Room:** Each of the restroom facilities within the Aeronautics building has lockers for use by AMT students. You may use a locker to store PPE, books, projects, etc. You must provide your own lock and you will need to write down your full name, student number, and locker number on the locker assignment sheet kept by the Lab Technician. Any locks found on lockers that have not been assigned will be cut and the contents of that locker with be disposed of. By the end of finals week for each semester, you will need to have you locker emptied and your lock removed. Any locks remaining on lockers will be cut and the contents of that locker with be disposed of.

**Grading Policy:** Because the AMT program is both a community college and a FAA approved curriculum at the same site, two grading systems are used. The subject area grade required by the FAA is determined for each of the FAA subjects completed throughout the semester. The scores for each of these subject areas are calculated independently of each other but they will be combined at the end of each semester and added to your final exam score as the Reedley College grade for that semester. The subject area scores will account for 80% of the semester grade and the final exam will account for the remaining 20%.

**The FAA subject scores are computed as follows:** A percent score will be used to compute all graded work where possible. Lecture scores will be based on a combination of quiz and test scores, class assignments, and homework assignments. Lab projects will be graded on many factors including: application of safety practices, job completion, time management, ability to follow directions, demonstrated knowledge of theory, student attitude and preparedness, and the care of equipment and tools. I will also evaluate your professional approach to each project. When each subject is completed, the instructor will combine all lecture and lab scores in that subject and convert it to a percent score. Wherever possible, lecture and lab scores will be weighted equally. This score is the FAA Subject Score.

***Important Note: Each one of the* 45 *FAA subject area scores must be at or above 70% when completed to receive credit toward the Airframe and Powerplant Certificate. The College grade has no bearing upon meeting the FAA guidelines.***

**FAA Subject Grading System: (sample calculations)**

**Lecture Points Earned Points Possible Lecture Percentage**

Quiz 1 11 15

Exam 1 25 30

Assignment 1 + 15 + 15

51 60 **85.0%**

**Lab Points Earned Points Possible Lab Percentage**

Project 1 18 20

Project 2 16 20

Project 3 + 15 + 20

49 60 **81.7%**

To arrive at the FAA subject score, add the lecture and lab sub totals together, and divide by two. This will result in an 83% FAA subject score. All percentages are rounded off to the nearest whole number.

**Lecture Percentage** 85.0% **FAA Subject Score**

**Lab Percentage** + 81.7% 166.7%

166.7% 2 = 83.35%  **83%**

The final exam score is not factored in, nor has any bearing on this FAA score.

To calculate the semester grade for Reedley College, each completed subject score explained above is then "weighted" in proportion to the number of hours of instruction it contains. These weighted scores are then combined with the final exam score, which is always 20% of the final grade. This score is the semester college grade. The college grade is an average of all work completed in the course during that semester, including the final exam.

**College Grading System: (sample calculations)**

**Subject Totals Hours per Subject Weight Factor**

Subject 1 85% 10 0.2

Subject 2 90% 25 0.5

Subject 3 80% 15 0.3

Sub total: 50 1.0

To arrive at the College grade, multiply each subject total by the weight factor (determined by subject length), then add the products together. For example:

Subject 1: (85%) subject total (X) weight factor (0.2) = 17.0%

Subject 2: (90%) subject total (X) weight factor (0.5) = 45.0%

Subject 3: (80%) subject total (X) weight factor (0.3) = 24.0%

Total of all "weighted" subjects: 86.0%

Final Exam Score 98.0%

Multiply the “weighted” total by 80%, then add the final exam score weighted at 20% for the “College” total score.

Formula:(86% X 80%) plus (98% X 20%)  **= 88.4%**

**Letter Grade scale is as follows:** 100%-90% = A 89%-80% = B 79%-70% = C 69%-60% = D 59% and below = F.

**Attendance Policy:** Students are expected to meet in the assigned area for roll call no later than 7:00 am each day. If a student misses a test due to an absence, the test must be taken the first day the student returns to class. If a quiz or in class assignment is missed, you will not be allowed to make it up unless you provide a doctor’s note.

**If a student misses 30 hours or more in any semester, that student may be dropped from that AMT course.**

Since good work habits are needed to become a successful aircraft maintenance technician, a student who habitually arrives late for class will be subject to dismissal from that AMT course. Students shall report the time missed for taking any unauthorized breaks, or for missing any portion of lecture or lab to the instructor responsible for recording his or her progress for that day. All time missed in any portion of a subject must be “made-up” within that subject. It is the student's responsibility to contact the instructor with whom the time was missed and arrange to make up the missed time. It is the responsibility of the student to verify that time made up is properly logged by that instructor. A missed time report will be maintained for each student by the instructor responsible for roll call. Any time missed, and subsequently made up, will be entered on this form by that instructor. The missed time report forms will be accessible for student verification. Time that has been “made-up” is still counted toward the 30 hour maximum per semester.

**1.** At the time of absence or late arrival the instructor will mark the student absent, enter the date, indicate whether the time missed was lecture or lab, and identify the subject(s) missed. **It is the responsibility of each student to verify that absences due to late arrival have been changed to actual time missed**. If not corrected, each absence becomes 7 hours time lost. Verification shall be done on the same day of the late arrival.

**2.** Students must report any time missed on the Time Make-up Formand submit it to the appropriate instructor at the end of the class session**. It is the student's responsibility to complete the time make-up form**. After the time is made-up, the instructor will enter the date the work was completed and initial. At the end of each semester, the time missed and the time made up will be posted in the master records. All work must be made up in order to qualify for the Certificate of Completion needed to take your FAA certification tests to become a licensed A&P Mechanic.

**Student Parking:** Reedley College parking permits are required for all vehicles on the Reedley College campus. Students will park only in designated parking areas. An overflow dirt parking lot on the west side of the campus is also available for parking if the weather permits. Parking is not allowed anywhere near the Aeronautics Building. You may purchase a parking permit from the cashier in the Student Services building for each semester you attend class. Parking permits cost $20 each. You must display the parking permit in your front windshield or hang it from your rear view mirror. Any violation of the above rules may result in a ticket.

**Behavioral Standards:** Please do not enter the classroom while another class is in progress. Please respect other persons and their property. Any disrespect to others may result in disciplinary action. Disruptive behavior, inappropriate language, or anything that could be viewed as sexual harassment is not acceptable. No food or drink is allowed in the AMT classrooms or laboratory except in designated areas. The use of any form of tobacco is only permitted outside the South side of the Aeronautics building; please help keep that area clean. You must not smoke within 20 feet of the building entrance. Always maintain an attitude of safety in the lab. Always receive proper training before operating equipment that you do not know how to use. You are not allowed to use any power tools or equipment unless you have been instructed to do so by your instructor.

**Academic Dishonesty:** Students at Reedley College are entitled to the best education that the college can make available to them. Students, their instructors, and their classmates, share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

*Cheating*is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another’s work, supplying one’s work to another, giving or receiving copies of examinations without an instructor’s permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

*Plagiarism*is a specific form of cheating: the use of another’s words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on a particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

**Technological Gadgets:** Mobile electronic devices such as MP3 players and mobile phones must be silenced and put away during class. There is an exception for tablets and laptops, but these devices are only allowed to be used in class during lecture and discussion for note taking. Computer use for note taking must be approved by the instructor and proof of those notes will be periodically checked by your instructor. If this privilege is abused or computer use becomes distracting, I will suspend this privilege. Mobile phone conversations, including texting, are distracting in the classroom setting and are not allowed. Please wait until break to use your phones.

**Special Needs Requests:** If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.