AMT-15 Lecture/Lab Syllabus
Intro to Aviation Maintenance for Airframe & Powerplant (Section No. 05298)

This syllabus also covers co-requisite labs AMT-16A (Sections #05300; 05299) & AMT 16B (Sections # 05301; 05302).

Instructor: Larry G. Hultgren
Phone: 909-652-6868
Email: larry.hultgren@chaffey.edu
Office Hours: Tuesday through Thursday, 0630 – 0715; Tuesday through Thursday, 1415-1510
Finals Wk. Office Hrs.: 13 May 2019 / 0800–1200 (in lieu of final’s week office hours)
Location: Aero building     Lecture: Aero 1-L; Lab: Aero 1A

Monday Schedule:
All-day lab 0715-1415   (break: 0900-0930; lunch: 1140-1220)
Lecture 0715-1040   (break: 0900-0930)
Lab 1040-1415   (lunch: 1140-1220)

Required Text:
Jeppesen, A&P Technician General Textbook
PowerPoint Packet /AMT-15 (Author: Hultgren)
AC43.13-1B/2B, Aircraft Inspections, Repair & Alterations
ASA-AMG-12, 2016 General Test Guide

(All required books must be in your possession or you may be dropped from the AMT program)

Optional Text:
FAR Handbook for AMTs (recommended)
Aircraft Technical Dictionary
Standard Aircraft Handbook

Student Parking: Valid Chaffey permits are required for all vehicles on Chaffey property; only in non-staff designated parking areas. Parking is not allowed anywhere near the Aero Building. Any violation of the above rules may result in a ticket; which if not paid will result in withheld grades and DMV notification.

Schedule 1st Day of Class: Monday, 01/14/2019

Lab Portion: Monday (0715-1415), Tuesday, Wednesday & Thursday (1045-1415 - starts immediately after lecture on Tues. - Thurs.) Friday Lab (0715-1415) or Late Lab (1415-1550; M-Th.)
Lecture Portion: Tuesday, Wednesday & Thursday, 0715-1045. Do not be late for class! You will be docked FAA. You may be locked out of the classroom, if you return late from break (0900 to 0930).

If you miss (or lose) more than an average of 7.5 hours of class/week in the first 3 weeks (12% per Department Syllabus) you will be dropped; not meeting FAA required hours.

Classroom Policies:
• Professionalism
  o Disregard of an instructor’s requests; discipline write-up (minimum) and a copy put in file / per Chaffey College student handbook.
Please silence/store all electronic devices (cell phones, iPods, computers, etc.) and anything else that will distract you or others from lecture.
Food and drinks are not allowed in the classroom per campus policy.
Please respect other persons and property during lecture and lab.
Disruptive behavior will not be tolerated; those not in compliance will be asked to leave or escorted off campus by campus police; disruptive behavior includes swearing, foul language and any remarks or gestures that may be taken as harassment or sexual harassment.

Self-Management
Sleeping is not acceptable during FAA time. You may stand at the back of the classroom, if room conditions permit. If you do fall asleep, time will be deducted from your FAA hours.

Integrity/Honesty
Cheating will not be tolerated and will be handled per the Chaffey College student handbook.
Time cards/sheets are Federal, FAA documents.
• DO NOT touch or clock-in (or out) anyone’s time card, but your own!
• Remind each other to clock in and out during the day (4x), especially at lunch (clocking in and out is required and no time will be given for the day if not accomplished).

Self-Esteem
Each individual student has personal strengths and weaknesses. Students will be praised in their strengths and encouraged in their weaknesses by all. Ridiculing will not be tolerated.

Teaching Methods:
Lecture and labs will be supplemented by: Videos, Computer-based training, Power-point presentations, Group tasking, Mentoring, Homework assignments and Practical hands-on experience. Classroom discussion and questions are allowed and encouraged.

Class Participation (and Mentoring)
Each student is expected to participate in class by:
• clocking in and out (4x per day)
• being involved in class discussions
• group tasking
• taking tests and quizzes (the date given and on-time)
• working diligently on projects (sitting around in lab, excessive talking or doing nothing is not permitted)
• having the required books and tools every day
• mentoring when appropriate.
  o Mentoring is an excellent way to solidify one’s own knowledge, while helping others. Mentoring is encouraged and expected from those with knowledge in the current subject area being taught.

Leaving the Aeronautics building (unless leaving for break, lunch or the day) is not allowed without notifying / receiving permission from your instructor and clocking out.

Absences, tardiness, use of electronic equipment and sleeping in class will be considered non-participation and time will be deducted, without your knowledge at each occurrence.

IT IS YOUR RESPONSIBILITY to find out from your peers about anything that was missed by you, such as hand-outs or homework, and get the needed information from them. (Continued on next page)
Lecture and Test Schedule:

- Complete assigned reading **prior** to their corresponding lecture dates throughout the term.
  - A **quiz of 20 questions or less** may be given at any time on current reading/lecture.
  - You are expected to have read the assigned reading **before** the specified lecture date.

The assigned dates and lecture topics are fluid; meaning that they begin and end on or about the assigned dates. You are responsible for the assigned reading before the lecture date.

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture/Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/15</td>
<td><strong>Welcome! (Questions about labs and program; start Aircraft Drawings)</strong></td>
</tr>
<tr>
<td>01/16</td>
<td>Aircraft Drawings (Explain Test Guide) pp. 5-1 to 5-21</td>
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<tr>
<td>01/17</td>
<td>Ground Handling &amp; Servicing pp. 13-1 to 13-12</td>
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<tr>
<td>01/21</td>
<td><strong>Martin Luther King Jr. Holiday (stay home and study 😊)</strong></td>
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<tr>
<td>01/22</td>
<td><strong>TEST – Aircraft Drawings (8103-8152) &amp; Pioneer Mechanics in Aviation [PMIA], Ch. 1</strong></td>
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<tr>
<td></td>
<td>Start: Hand Tools &amp; Meas. Devices pp. 9-1 to 9-20</td>
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<tr>
<td>01/23</td>
<td>Hand Tools &amp; Measuring Devices pp. 9-21 to 9-40</td>
</tr>
<tr>
<td>01/24</td>
<td>Aircraft Hardware pp. 8-1 to 8-38</td>
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<tr>
<td>01/29</td>
<td>Aircraft Structural Materials pp. 7-1 to 7-28</td>
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<td>01/30</td>
<td>Nondestructive Testing / Review pp. 11-1 to 11-21</td>
</tr>
<tr>
<td>01/31</td>
<td><strong>TEST – Materials and Processes (8219-8307) &amp; PMIA, Ch. 2</strong></td>
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<tr>
<td></td>
<td>Cleaning and Corrosion pp. 12-1 to 12-15</td>
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<tr>
<td>02/05</td>
<td>Corrosion Detection and Treatment pp. 12-16 to 12-31</td>
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<tr>
<td>02/06</td>
<td>Fluid Lines and Fittings pp. 10-1 to 10-20</td>
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<tr>
<td>02/07</td>
<td>Phys/Math (Matter, Energy, Fluid Mech.) pp. 2-1 to 2-6, 2-18 to 2-31; 1-16 to 1-20</td>
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<tr>
<td>02/12</td>
<td>Physics (Aerodynamics) / Review pp. 2-32 to 2-51</td>
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<tr>
<td>02/13</td>
<td><strong>TEST – Cleaning / Corrosion, Fluid Lines and Physics (8347-8378, 8192-8218, 8465-84918 partial; not used – 8468, 8471, 8477, 8480, 8481) &amp; PMIA, Ch. 3</strong></td>
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<tr>
<td></td>
<td>Start Maintenance Publications pp. 14-1 to 14-15 (FAR #1, 21, 23, 39, 43, 91)</td>
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<tr>
<td>02/14</td>
<td>Maintenance Publications pp. 14-1 to 14-15 (FAR #1, 21, 23, 39, 43, 91)</td>
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<tr>
<td>02/15 – 18</td>
<td><strong>President’s Holidays (stay home and get some rest 😊)</strong></td>
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<tr>
<td>02/19</td>
<td>Maintenance Publications TCDSs, Specifications, Alerts</td>
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<tr>
<td>02/20</td>
<td>Finish FARs, Accident Report, Annual Inspection Video</td>
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<td></td>
<td>Maintenance Forms &amp; Records pp. 14-16 to 14-23 (337, 8010-4, Airworthiness Cert., Registration, Wt. &amp; Balance, Log Books)</td>
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<tr>
<td>02/21</td>
<td>Mechanic Privileges and Limitations pp. 15-1 to 15-5 (FAR 65)</td>
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<tr>
<td>02/26</td>
<td>Finish/Review/ASA test prep</td>
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<tr>
<td>02/27</td>
<td><strong>TEST- Maintenance Publications, Mechanic Privileges and Limits (8443-8464, 8492-8545) &amp; PMIA, Ch. 4</strong></td>
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<tr>
<td>02/28</td>
<td>Ground Handling and Servicing pp. 13-13 to 13-35</td>
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<tr>
<td>03/05</td>
<td>Open</td>
</tr>
<tr>
<td>03/06</td>
<td>Open</td>
</tr>
<tr>
<td>03/07</td>
<td><strong>AMT 15 Mid-Term (8103-8152, 8192-8378, 8394-8537, minus the ones above not used.)</strong></td>
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</tbody>
</table>

(03/08 - Last day for the Friday Lab section; Last day for late section – 03/07)

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<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture/Test</th>
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<tbody>
<tr>
<td>03/12</td>
<td>Basic Electricity pp. 3-1 to 3-12</td>
</tr>
<tr>
<td>03/13</td>
<td>Basic Electricity pp. 3-13 to 3-23</td>
</tr>
<tr>
<td>03/14</td>
<td>Series DC Circuits pp. 3-24 to 3-26</td>
</tr>
<tr>
<td>03/18 – 24</td>
<td><strong>SPRING BREAK (Have fun; be safe and prep for circuits!)</strong></td>
</tr>
<tr>
<td>03/26</td>
<td>Parallel DC Circuits pp. 3-27 to 3-28</td>
</tr>
<tr>
<td>03/27</td>
<td><strong>Test – Series DC &amp; PMIA, Ch. 5</strong> (Cont. Parallel DC Circuits lecture)</td>
</tr>
<tr>
<td>03/28</td>
<td><strong>Test – Parallel DC</strong> (Introduce Complex DC Circuits)</td>
</tr>
<tr>
<td>04/02</td>
<td>Cont. Complex DC Circuits pp.3-29 to 3-33 (Cont. on next page)</td>
</tr>
</tbody>
</table>
Test, Quiz and Grading Information:

- **Tests** (9) in most cases will consist of multiple choice questions directly from lecture, the text and the FAA General Database. Specific subject tests will be given at the conclusion of each chapter or section and will be worth 35 points each (8 tests), for a maximum of **275 points**. If you take all 9 tests, you will end up with 315 points (a reward for always being here for the tests). 😊

You are responsible for all questions in the test guide, even if not covered in lecture.

  - **Tests** will not be offered early and must be taken during normal class hours on the date indicated. Any time after test time is considered a missed test.

If you come in late, you will have the remaining time left for the test.

  - **Tests** will normally be given at the start of class on the scheduled days and **cannot be made up if missed or taken over if failed**.

- **Quizzes** (10) will be averaged and worth up to 10 points each; for a total of **100 points**. Once again, if you are present for all quizzes (12), you will end up with 120 points possible (rewarded, again!).

Quizzes will normally be given at the start of class and **cannot be made up or taken over**. The classroom door will be locked when the quiz begins and opened at the conclusion of the quiz.

(Continued on next page)
• **Mid-term & Final Exam** will be given at the middle and end of the course and will be worth 50 points each, for a total of **100 points** (Being late for a mid-term or final will result in a loss of 25 points).

• **Lab projects**, noted on the project sheet (Packets # 1, 2, 3, 4, 5, 6, 7 and 11), that are **completed, graded and turned in** will be worth (up to) a total of **150 points** (0.75 points per project hour).

• **Participation** is a critical part of the AMT program and thus, **375 points** are assigned to your participation, which is defined previously, on page 2. Points will be assigned at **0.85 points per hour** of participation (441 hours available). **100 of these participation points** will be deducted if the books being used or tools on the required lists are not in the lab on a daily basis.

| If the required TOOLS or BOOKS are not present in the classroom and lab, you may be: |
| 1) ASKED TO LEAVE UNTIL YOU HAVE THEM, OR |
| 2) YOU MAY BE DROPPED FROM THE AMT PROGRAM. |

• **Presentations** - Each student will prepare an oral presentation, which will be due at the end of the semester (04/25/2018). It may be on any subject (related to aviation), with more info given in class. This presentation will be part of your participation points (**50 points deducted if not completed**).

• The point values of all the above will be averaged and totaled, which will account for your final grade (maximum of **1000 points**).  

<table>
<thead>
<tr>
<th>Tests</th>
<th>275</th>
<th>(8 tests, approx. 35 points each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>100</td>
<td>(10 quizzes, 10 points each)</td>
</tr>
<tr>
<td>Mid-Term/Final</td>
<td>100</td>
<td>(50 points each)</td>
</tr>
<tr>
<td>Lab Projects</td>
<td>150</td>
<td>Packets # 1, 2, 3, 4, 5, 6, 7 &amp; 11 (0.75 points project hour completed/graded)</td>
</tr>
<tr>
<td>Participation</td>
<td>375</td>
<td><strong>100 of these points will be deducted</strong> if books or tools are not present in lab; <strong>50 will be deducted</strong> if a presentation is not completed.</td>
</tr>
<tr>
<td><strong>Total Available Points</strong></td>
<td><strong>1000</strong></td>
<td>(Points/10 = Final Grade)</td>
</tr>
</tbody>
</table>

**Grading:** 100-90=A, 89-80=B, 79-70=C, 69-60=D, <59=F  
Instructor has a right to give a higher grade than normally earned because of extenuating circumstances.

**An “F” grade may be given** if student participation drops below 88 % of the class time or if required projects are not completed; not meeting FAA time/project requirements. Note: Per state rules, students with 3 Ds, Fs or Ws, or any combination of those will not be allowed to register in any future classes.

**Appendix to Aero 15 Syllabus – Additional labs**

**GENERAL LABS -**

16A Friday; 16A Late  Sections #02553; 02551  Project Packet(s): #12 & #8
16B Friday; 16B Late  Sections # 02555; 02554  #10 & #9  
(See Lab Project Progression on page 6)

(Late lab/Monday - Thursday, time: 1415 to 1550; Friday lab time: 0715 to 1415)

**Individual project grades** will be based on the following:

• **Applied knowledge** of project is worth **70 percent** of the project grade.
• **Referencing answers** will be worth **10 percent** of the project grade.

(Continued on next page)
• Penmanship (is it readable?) will be worth 10 percent of the project grade.

• Professional conduct consists of the following and will be worth 10 percent of your grade.

  o Safety - Do you follow common shop safety procedures? Do you wear your safety glasses and personal protective equipment?

  o Proper attitude - A zero tolerance policy will be enforced in the lab concerning horseplay. This includes wasting lab time with excessive talking, cell phones and bothering others.

  o Paperwork/Projects - No project copying. Do you keep your time cards filled out correctly? Do you keep track of your projects, project index sheet and syllabus?

  o Tools - Do you have the required personal tools while working in the lab? Unannounced toolbox checks will be done throughout the term. Are you careful with shop tooling and returning items’d out from tool crib?

  o Cleanliness - Do you keep your assigned work area clean? Do you help others clean their areas if you are done? Do you practice FOD prevention?

If you are not cleaning during the entire clean-up time, hours will be deducted from your FAA total time file without your knowledge.

All the above questions and notations are common industry standards. Remember, you probably will want a letter of reference from the instructors when you complete the program; so do your best! 😊

Final lab grades for Aero 16A, B will be as follows:

Completion of assigned project packets (see pg. 5)  550 points
Possession of required books & tools  205 points
Participation, defined above (4.5 pts./hr. of participation; approx. 55 hours available)  245 points

Total available points: 1,000 pts. /10 = Final Grade

Books and Tools should be in the lab at all times, if you are in lab, whether or not you are doing hands on projects or paperwork. If books and tools are not available, you may be asked to not participate until your books and tools are present or you may be dropped for not complying with FAA program requirements. Additionally, your tool box must have your name located somewhere, where it is visible to instructors/crib attendants and a current contact number on file with the tool crib attendant.

(Instructor has the right to give a higher grade than normally earned because of extenuating circumstances.)

<table>
<thead>
<tr>
<th>LAB PROJECT PROGRESSION (Project packet completion dates)*</th>
<th>1st 8 weeks</th>
<th>2nd 8 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packet #1, 2 &amp; 3</td>
<td>End of week 3</td>
<td>Packet #7</td>
</tr>
<tr>
<td>Packet #4</td>
<td>End of week 5</td>
<td>Packet #8 &amp; 9</td>
</tr>
<tr>
<td>Packet #5</td>
<td>End of week 6</td>
<td>Packet #10</td>
</tr>
<tr>
<td>Packet #6</td>
<td>End of week 7</td>
<td>Packet #11 &amp; 12</td>
</tr>
</tbody>
</table>

*Project packet completion means: all projects in the packet are completed and graded by an instructor and turned into the my office for recording on FAA documents.

Get each project signed off by an instructor before moving on to the next project; multiple projects will not be graded by any instructor. Project packets not meeting the above requirements will automatically receive a 70% or less.

(Continued on next page)
USE OF THE COMPUTERS IN THE LAB IS A PRIVILEGE

Computers are for assigned projects that are Aviation-related only; such as AD searches, Federal Aviation Regulation studies or final Qualification Testing. If the computers are misused, you will be banned from the computer room, written up for discipline and possibly suspended from the Aero Program, depending on the severity of the misuse. Computer misuse ranges from wasting lab time to surfing/downloading anything not aviation related.

Since Qualification testing and research are being conducted, the computer lab will be considered a “Quiet Zone”. Loud talking/laughter and music will not be allowed. If you are completing an interactive lab with sound, headphones/earphones are required. Please cooperate.

Additional, the computers in the lab will not be used for Test Preparation or building of PowerPoint Presentations. These items are considered homework and can be done at home, Chaffey Computer labs or your local library after FAA hours.

PERSONAL CELL PHONE/IPOD USE IN THE LAB

Personal cell phone use in the lab will be kept to a minimum. Excluding emergencies, incoming callers should be advised to call back during your breaks or lunch.

Believe it or not, cell phone use in class/lab is not a constitutional right. 😊

Texting, playing games & listening to music (IPODs/IPHONES) are not allowed in lecture.

Listening to music with earbuds will be acceptable (at the lab tables) while doing book/paper-work only, if the sound level is kept at a minimum. This is not allowed while working with tools!

• If the student does not comply with the above standards, written disciplinary action will be put into the student’s file, with possible expulsion consequences if the student persists.

*NOTICE*

Students will have all General projects completed before progressing on to Airframe or Powerplant. Check with your instructor if you have more than 40 hours of unfinished projects. A list of students that have completed the General requirements will be given to the Airframe or Powerplant instructor on the first day of their lecture/lab. If your name is not on the list you may be dropped.

Taxi Project: Each student completing the General section will be required to taxi an aircraft, which will be conducted at Cable Airport, located in Upland, CA. Participation is mandatory to complete the practical portion of the Aircraft Taxiing. Additional information will be given when needed.

IF YOU DECIDE TO STOP ATTENDING THIS CLASS FOR ANY REASON (poor attendance, poor test grades, etc.), IT IS YOUR RESPONSIBILITY TO DROP YOURSELF FROM THIS LECTURE/LAB AND ANY ADDITIONAL LAB SECTIONS THAT YOU MAY HAVE; OTHERWISE A COURSE GRADE OF “FW” MAY BE ISSUED.

Due to program changes and curriculum updates, the instructor reserves the right to change this syllabus at any time.

12/05/2018
### Student Learning Outcomes for AMT-15 and 16A, B

**AMT-15**

- Students successfully completing AMT 15 (grade "C" or higher) will have mastered basic aircraft electricity principles.
- Students successfully completing AMT 15 (grade "C" or higher) will have mastered the information required by the Federal Aviation Administration in the area of: Aircraft Drawings.
- Upon the successful completion of AMT 15 (grade C or higher) students will acknowledge the critical thinking skills needed to be successful in this field.

**AMT-16A, B**

- Students successfully completing AMT 16A (grade "C" or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the areas of materials and processes.
- Students successfully completing AMT 16A (grade "C" or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the area of: aircraft cleaning and corrosion control.
- 08/15/2016 Students successfully completing AMT 16A (grade of C or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the areas of: aircraft maintenance publications.

- Students successfully completing AMT 16B (grade "C" or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the areas of weights and balances.
- Students successfully completing AMT 16B (grade "C" or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the areas of: mathematics.
- Students successfully completing AMT 16B (grade "C" or higher) will have mastered the needed information and have safely completed individual lab projects required by the Federal Aviation Administration in the areas of basic physics.

*Note:* This is the classroom syllabus and takes precedence over, but is to be used in conjunction with the Aeronautics Department Syllabus that contains department-wide policies and practices.