



Basic Course Information: Aviation Maintenance Technician Program

Course Number(s): AMT05 and AMT06

Section Number(s): 6205 and 6206

Class rooms: AT B201

Class hours: (4:45 – 8:10) and (8:10 – 10:25)

Title: Basic Electricity and Auxiliary Systems / Laboratory.

Instructor's name: Mr. Moy, J M

Office: AT B214

Office hours: Monday – Thursday (3:30 pm - 4:00 pm)

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Disabled Students Programs & Services - DSP&S opens doors for students with special physical, communication or learning needs. DSP&S is located on the First Floor of HRLC phone number 310-287-4450. In addition, DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language, interpreters and assistive technology.

Prerequisite/Co-Requisite – Co-requisite: AMT05 and AMT06 must be taken concurrently.

Required textbooks:

| Textbook | Author or Publisher |
|--|---|
| FAA-H-8083-30; FAA-H-8083-31; FAA-H-8083-32 (or equivalent textbooks and workbooks, as are currently available) | Department of Transportation, Federal Aviation Administration |
| A.C.43.13-1B 14 CFR Part 43 | Department of Transportation, Federal Aviation Administration |
| Federal Aviation Regulations for Aviation Maintenance Technicians | Department of Transportation, Federal Aviation Administration |
| A&P Technician Airframe Textbook and workbook (Chapter 12, 13, & 14) | Jeppesen |
| A&P Technician General Textbook and workbook (Chapter 3) | Jeppesen |
| A&P Technician Powerplant Textbook and workbook | Jeppesen |

Recommended materials/equipment:

Basic Electricity

| | |
|-------------------------------------|------------------------------|
| Capacitor checker | Multimeters |
| Circuit components | Hydrometer |
| Ni-Cad and Lead-acid batteries | Aircraft Maintenance Manuals |
| Soldering guns and irons | School aircraft |
| Project and/or school mockup boards | Electric starters |
| Combustion heater | Aircraft Nav/Com systems |

Course(s) description overview:

Lecture: Instruction is offered in basic electricity, ohm's Law, DC and AC circuits, semi-conductors, metric prefixes, and scientific notation. Calculate and measure capacitance, inductance, voltage, current, resistance, continuity and electrical power. Learn the relationship of voltage, current and resistance in an electrical circuit. Read and interpret electrical circuit diagrams, including solid state devices and logic functions. In addition, instruction including aircraft communication & navigation systems, cabin atmosphere control and ice/rain control systems.

Laboratory: This course describes relationships between voltage, current and power and explains how to use testing and measuring equipment in the inspection, checking, servicing and repair of the following systems: aircraft air-conditioning, communication/navigation, and ice/rain control.

Students Learning Outcomes

This course will help students achieve the following institutional Student Learning Outcomes:

1. Student will know, understand, and apply facts, principles, theories, and concepts of AC & DC voltage, current and power, aircraft radios, antennas, pressurization, air-conditioning, heating warning systems and ice/rain control systems.
2. Student will understand how they relate to the total operation and maintenance of aircraft.
3. Student will be able to make independent and accurate airworthiness judgments.
4. Student will be able to perform all skill operations to return-to-service standard using appropriate data, tools, and equipment. Inspections are performed in accordance with acceptable or approved data.

Tentative Schedule: (October 27, 2014 – December 21, 2014)

Week 1:

- Orientation.
- Introduction to basic electricity.
- Electron theory, principals, amperage, voltage and resistance.
- Basic Electricity - DC

Week 2:

- Power, Metric prefixes, Magnetism, Ohm's Law.
- Basic Electricity – DC advanced.
- Kirchhoff's Laws, series, parallel and compound circuits, Batteries.

Week 3:

- Basic Electricity – AC
- AC Ohms Laws, terms, values, inductance, capacitance and reactance.
- Heath concepts AC 6, 7, 8, Ohm's Law problems.

Week 4:

- Basic Electricity – AC advanced
- Impedance, Resonance, Transformers, Rectifiers and filters.
- Basic Solid State.

Week 5:

- Semi-conductors devices, circuits, radio principles.
- Basic Communication and Navigation.
- Antenna, ADF, VOR, ILS, RMI, ELT, Pulse, Automatic Flight Controls.

Week 6:

- Aircraft Cabin Atmospheric Control System.
- Oxygen, Heating, Pressurization and cooling.

Week 7:

- Training aids to be assigned.
- Schematic to be assigned.
- Ice and Rain Control Systems, and Review.

Week 8:

- Deicing, Anti-icing, Rain control and review all text books.
- Final Exam

Instructional Methods:

Lecture with PowerPoint presentation, video presentation of subject matter, chalk (white) board and hand out materials.

Lecture and class participation:

Reading assignments are given in class. Lecture and class discussions will follow the order in the book being used. You are requested and encouraged to participate in the lecture classes. Participation is important and can make a difference in your grade.

Lab and participation:

You are required to complete all lab assignments to receive a passing grade in lab. Lab projects may consist but not limited to the following projects: assigned workbook assignments, group or individual lab project (assigned aircraft/components).

Grading System: A grade of "C" or better is required for FAA credit (14 CFR Part 147)

Lecture grade: All lecture (Subject Areas) test scores (80%); PowerPoint presentation (5%); Final exam (10%) and attendance/class participation (5%).

Lab grade rating scale: Practical/Skills (50%), Oral/Knowledge (50%)

Grade rating scale:

1. A (90-100%) demonstrates the ability to take accurate measurements and accurately follow maintenance procedures.

2. B (80-89%) demonstrates competence in taking measurements and competence following procedures.
3. C (70-79%) demonstrates understanding of the basic principles and procedures.
4. D (60-69%) demonstrates only partial basic understanding of correct procedure.
5. F (<70%) demonstrates no understanding of correct procedure. Incomplete lab assignments.

Policies

Attendance policy: Students will sign in upon arrival on a daily class attendance sheet provided by the instructor for each class, and the instructor will hold a roll call to verify the presence of each student (at the start of the class, after lunch and at end of the class).

There is a strong correlation between attendance and grades. Poor attendance goes along with poor grades.

You are responsible for information, exams, date changes etc. Presented in class whether you are present or not.

Minimum hours required by CFR 147.21(b) (1) (2) (3) are 400 hours for General Subjects, CFR 147.21 (C) 750 hours for Airframe Subjects and CFR 147 (D) 750 hours for Powerplant Subjects, totaling 1900 hours. (WLAC: Gen – 420, AF – 866, PP – 874)

To meet the code of Federal Regulation (**14 CFR Part 147**) related to attendance a student may be absent without make-up time as long as the total instruction hours meet the minimum hours required by 14CFR Part 147.21 General curriculum requirements (b)(1)(2)(3). **Note:** All lost time for General Curriculum Subjects Appendix B to Part 147 will require make-up time.

**** Attend the 1st class section or risk losing your seat.** Whether you enroll before or after the first day of the semester, failure to be present for the first day of classes may result in your seat being given to another student.

When a student absences or tardiness beyond **FIVE (5) DAYS** the instructor has the right to exclude the student from class at his/her discretion.

Time can be made up but it is at the **sole discretion** of the instructor, and the instructor **is not required** to allow you to make up (absences or tardiness) time.

Add slips must be completed and processed with admissions by the end of the first week of class. If you fail to do so you will be excluded from the class.

West Los Angeles College "Standards of Student Conduct" (Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.). This includes on plagiarism, classroom disruption, cell-phone noise, or other issues.

Safety Rules

Eye protection – is required by each student and must be worn at all time in labs when working on any project/operating any machinery may cause hazardous if is not worn.

Loose clothing – may not be worn in the labs as it constitutes a safety hazard.

Shoes – shoe must be worn in all lab classes. Sandals and open toe shoes are not acceptable in labs.

Recommendations for student success:

1. Be in class every day, on time, and stay for the entire time.
2. Be prepared to work, and have your tools with you.
3. Learn to be organized.
4. Study and review for each day.
5. Keep up in the workbooks and do not fall behind.
6. Find someone in the class you can call if you miss a class so you know what is happening with the class.
7. If you do not know, ask. Remember the only stupid question is the one you did not ask! Keep in mind that nobody knows everything, so ask your question because the person seating next to you may not know!

*** Standards of Student Conduct - Things to know on code of conduct *** (Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.)

The West LA College faculty, staff and administrators are dedicated to maintaining an optimal learning environment and will not tolerate any disruptive behavior in or outside of the classroom or any academic dishonesty. These standards apply to all students. Disruptive, disrespectful, or obstructive behavior will be dealt with in accordance with the LACCD Standard of Student conduct. Disciplinary action can be taken if student behavior interferes with instruction. (Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.)

- Warning—A verbal or written notice, given to the student by the instructor.
- Removal by the Instructor—An instructor may remove a student from class for the day of the incident and the next class meeting. During the period of removal, the student shall not return to the class from which he or she was removed without the permission of the Vice President of Student Services.

Cell Phones and Lap Tops

Cell phones must be on vibrating mode, as a courtesy to your classmates and your professor. It is not acceptable to take phone calls or text in class. If you have to answer an emergency phone call, please step out of the classroom. You may take notes in class on your laptop, but do not let that be a distraction to participating in class.

Electronic Mail

E-mail is the best and quickest way to communicate with me. Every WLAC student has an e-mail address. Check your Student.LACCD@Edu account daily/weekly and to access your account visit www.wlac.edu, then click on the Student Email button. To log in use your student ID # and your birthday and month. Your Student.LACCD@Edu email can be forwarded to any other personal email account.

Dropping the course

According to college policy, you will be excluded for excessive absences or for not following the Standards of Student Conduct (printed in the Schedule of Classes). If you drop the course, be sure to do so at the Admissions and Business Offices and keep your receipt. Pay attention to drop dates in the Schedule of Classes. See below for the important date:

| Fall 2014: 8 Week Session #1 Sept 2 - Oct 26 | Fall 2014: 8 Week Session #2 Oct 27 - Dec 21 |
|--|--|
| LAST DAY TO | LAST DAY TO |
| Drop a class w/o a Fee – September 8 | Drop a class w/o a Fee – October 31 |
| Drop a class w/o a W – September 8 | Drop a class w/o a W – October 31 |
| Drop a class w/a W – October 10 | Drop a class w/a W – December 5 |
| File Pass / No Pass – September 8 | File Pass / No Pass – October 31 |

Classroom and Campus Cleanliness

Please help us keep the classroom and campus grounds clean. No food or beverages, except for water, is permitted inside instructional classrooms /labs. Please use the receptacles to dispose of trash. All students must take part in shop cleanup prior to Lab class end time.

Instructional Support and Monitoring

- Monitor your academic progress online at www.wlac.edu click "Counseling, Assessment and Orientation," then on the DegreeWorks icon, or visit the Counseling Office.
- For instructional support and assistance with research projects, visit the Learning Skills Center and Library in HLRC.

Required tooling list

| | | |
|----------------------------------|---|--|
| File - 8" smooth cut | Hammer - soft face and Ball peen 8oz | Sockets set - 1/4" drive, 12 pts short and deep sockets |
| Ratchet - 1/4" and 3/8" drive | Breaker bar - 1/4" and 3/8" drive | Universal joints - 1/4" and 3/8" drive |
| Extension 1/4" drive - 3" and 6" | Pliers 6" slip joint and Diagonal 7" | Pliers needle nose and duckbill |
| Set of Pin Punches | Scale 6", 64 th and 100ths | Common screwdriver 6" and Philips #1 & #2 tip |
| Adapter (reducer) 3/8" to 1/4" | Combination square 12" | Combination wrench 5/16" – 1" |
| Magnifying glass 4 to 10 power | Allen wrenches set | Inspection mirror |
| Magnet pencil type | Flex mechanical fingers | Flashlight |
| Eye protection | Hearing protection | Leather gloves |

Student Acknowledgment (Fall 2014 AMT 05 & AMT 06)

(Please return this sheet to the instructor)

"I _____, have completely read this syllabus and understand and agree to the course requirements."

Please indicate below, any special needs or circumstances that may have some impact on your work in this class, and for which you may require special accommodations, including but not limited to physical or mental disabilities, inability to arrive in class on time or need to leave class early, and observance of religious holidays.

Special needs or circumstances:
