

Aviation Technology- Maintenance
Standard Course Outline

AVTP 1082 - ENGINE ELECTRICAL SYSTEMS/AUXILIARY POWER UNITS

Catalog Description: Study of reciprocating engine and turbine engine electrical systems. Students will also check armatures using a growler, generators, alternators, and engine wiring.

Clock hours: 21 lecture and 21 shop

Prerequisite: AVTG 1001

Credit hours/ Contact hours/ Load hours: 2/42/6 hours per day for 7 days

Target Audience & Transferability:

This course is designed for students seeking a Technical Certificate in Powerplant or, when combined with General and Airframe, an AAS in Aviation Maintenance Technology, or an AS in Aviation Maintenance Management. Individual AVT courses or Certificates may be transferable to other FAA Certified Aviation Maintenance Technician schools under Federal Regulations.

Course Topics/ Student Outcomes:

ENGINE ELECTRICAL SYSTEMS

REFERENCES: AP; JSPT.

FAA Standard: *FAA-S-8081-28 5-3, Change 2 (9/24/2003)*

By the end of the course, students will:

1. Exhibits knowledge of at least two of the following—
 - a. generator rating and performance data location.
 - b. operation of a turbine engine starter-generator.
 - c. the procedure for locating the correct electrical cable/wire size needed to fabricate a replacement cable/wire.
 - d. installation practices for wires running close to exhaust stacks or heating ducts.
 - e. operation of engine electrical system components.
 - f. types of and/or components of D.C. motors.
 - g. inspection and/or replacement of starter-generator brushes.
2. N/A
3. Demonstrates the ability to perform at least one of the following—
 - a. flash a generator field. (Level 3)
 - b. install an engine driven generator or alternator. (Level 3)
 - c. use of an engine electrical wiring schematic. (Level 2)
 - d. accomplish the installation of a tach generator. (Level 3)
 - e. fabricate an electrical system cable. (Level 3)
 - f. repair a damaged engine electrical system wire. (Level 3)
 - g. replace and check a current limiter. (Level 3)
 - h. check/service/adjust one or more engine electrical system components. (Level 3)
 - i. troubleshoot an engine electrical system component. (Level 3)

TURBINE POWERED AUXILIARY POWER UNITS

REFERENCES: AP.

FAA Standard: *FAA-S-8081-28 5-12, Change 2 (9/24/2003)*

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Students will:

1. Exhibit knowledge of at least two of the following—
 - a. inspection to ensure proper operation of turbine driven auxiliary power unit.
 - b. replacement procedure for an igniter plug.
 - c. servicing an auxiliary power unit.
 - d. troubleshooting an auxiliary power unit.
 - e. function and operation of auxiliary power unit(s).

NOTE: Subject area may be tested at the same time as AREA B, TURBINE ENGINES. No further testing of auxiliary power units is required.

Required Text(s):

Powerplant Textbook (ASA)	ISBN # 1-56027-547-2
Powerplant Test Study Guide (ASA)	ISBN # 1-56027-572-3
FAR Handbook for AMT (ASA)	ISBN # 1-56027-563-4
AC43.13-1B Acceptable Methods, Practices, & Techniques (ASA)	ISBN # 1-56027-488-3

Optional Text(s):

Technician Powerplant Textbook (Jeppesen)	ISBN # 0-88487-207-6
Technician Powerplant Workbook (Jeppesen)	ISBN # 0-88487-243-2
AC65-12A Aircraft Mechanics Handbook Powerplant (FAA)	ISBN # 1-56027-024-1

Supporting Reference(s)

O&P Study Guide (ASA)	ISBN # 1-56027-406-9
Maintenance Handbook (ASA)	ISBN # 1-56027-518-9
Dictionary of Aeronautical Terms (ASA)	ISBN # 1-56027-587-2

The workbooks and test study guides may be used to aid the instructor and students to reinforce the textbook information. Other Textbooks may be issued depending upon availability.

Required Methods of Instruction:

Classes are taught off-campus in a full time day or night format, requiring maximum attendance. Attendance is taken every hour. Missed time must be made up outside of regular scheduled class time before moving to the next subject.

Required Forms of Assessment:

Periodic exams will be performed by FAA approved instructors as required to insure progress. Students must pass this course with a 70% or better to qualify for an FAA approved Certificate of Completion in the Power-plant Section.