

Aviation Technology- Maintenance
Standard Course Outline

AVTP 1012 – PROPELLERS

Catalog Description: Theory and operation of propellers including ice control, governors, balancing, synchronizing, and propeller lubrication. Includes service and repair of fixed-pitch, constant speed, and feathering propellers. Various propeller configurations (constant speed, variable pitch, etc.) will be covered in detail. Clock hours: 20 lecture, 28 shop

Prerequisite: AVTG 1001

Credit hours/ Contact hours/ Load hours: 2/48/6 hours per day for 8 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.

Student Outcomes/ Course Topics:

REFERENCES: AC 43.13-1B, AC 65-12A; AGTP.
FAA Standard: *FAA-S-8081-28* 5-11, Change 2 (9/24/2003)

By the end of the course, students will:

1. Exhibit knowledge of at least two of the following—
 - a. propeller theory of operation.
 - b. checks necessary to verify proper operation of propeller systems.
 - c. procedures for proper application of propeller lubricants.
 - d. installation or removal of a propeller.
 - e. measurement of blade angle with a propeller protractor.
 - f. repairs classified as major repairs on an aluminum propeller.
 - g. reference data for reducing the diameter of a type certificated propeller.
 - h. operation of propeller system component(s).
 - i. propeller governor components and operation.
 - j. theory and operation of various types of constant speed propellers.
 - k. function and operation of propeller synchronizing systems.
 - l. function and operation of propeller ice control systems.

2. *Demonstrate the ability to perform both of the following—
 - a. inspection of a propeller installation, and make a minor repair on an aluminum propeller. (Level 3)
 - b. determine what minor propeller alterations are acceptable using the appropriate type certificate data sheet. (Level 2)

*Core competency element

3. Demonstrate the ability to perform at least one of the following—
 - a. service a constant speed propeller with lubricant. (Level 2)
 - b. use a propeller protractor to determine correct blade angle. (Level 3)
 - c. leak check a constant speed propeller installation. (Level 3)

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- d. install a fixed pitch propeller and check the tip tracking. (Level 3)
- e. inspect a spinner/ bulkhead for defects and proper alignment and installation. (Level 3)
- f. dye-penetrant inspection to determine the amount of propeller damage. (Level 2)
- g. inspect and/or adjust a propeller governor. (Level 3)
- h. inspect a wood propeller. (Level 3)
- i. troubleshoot a propeller system. (Level 3)

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.