

Aviation Technology- Maintenance
Standard Course Outline

AVTA 1102 - HYDRAULICS/PNEUMATICS

Catalog Description: Theory and repair of hydraulic and pneumatic power systems.
Clock hours: 21 lecture, 21 shop

Prerequisite: AVTG 1001

Credit hours/ Contact hours/ Load hours: 2/42/ meets seven 6-hour days

Target Audience & Transferability:

This course is designed for students seeking a Technical Certificate in Airframe or, when combined with General and Powerplant, 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/ Topics:

REFERENCES AC 65-15A; AMT-A; JSAT.
FAA Standard *FAA-S-8081-27* 3-2, Changes 2 (9/24/03) & 3 (6/21/04)

Upon course completion, the student:

1. Exhibits knowledge of at least two of the following—
 - a. hydraulic and/or pneumatic system, and/or system component(s) function/operation.
 - b. servicing, function, and/or operation of accumulators.
 - c. types of hydraulic/pneumatic seals and/or fluid/seal compatibility.
 - d. hydraulic/pneumatic seal maintenance procedures.
 - e. types of hydraulic/pneumatic filters and/or filter operation.
 - f. filter maintenance procedures.
 - g. pressure regulators and valves.
 - h. servicing hydraulic and/or pneumatic systems.
 - i. types/identification and/or characteristics of various hydraulics fluids used in aircraft.
 - j. hydraulic/pneumatic system safety practices/precautions.
2. *Demonstrates the ability to:
 - a. Select and install a hydraulic seal. (Level 3)*Core competency element.
3. Demonstrates the ability to perform at least one of the following—
 - a. service a pneumatic or hydraulic system filter. (Level 3)
 - b. inspect components or portions of a hydraulic or pneumatic system. (Level 3)
 - c. locate fluid servicing instructions and identify/select fluid for a particular aircraft. (Level 2)
 - d. service a hydraulic reservoir. (Level 3)
 - e. troubleshoot a hydraulic or pneumatic system. (Level 3)

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- f. repair a hydraulic or pneumatic system defect. (Level 3)
- g. remove and install hydraulic or pneumatic system component(s) and check operation. (Level 3)
- h. service a hydraulic system accumulator. (Level 3)

Required Text(s):

Airframe Structures Textbook (ASA)	ISBN # 1-56027-339-9
Airframe Systems Textbook (ASA)	ISBN # 1-56027-340-2
Airframe Test Study Guide (ASA)	ISBN # 1-56027-571-5
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 Airframe Textbook (Jeppesen)	ISBN # 0-89100-395-9
Technician Airframe Workbook (Jeppesen)	ISBN # 0-89100-402-5
AC65-15A Aircraft Mechanics Handbook Airframe (FAA)	ISBN # 1-56027-023-3

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 used depending upon availability.

Required Methods of Instruction:

Classes are taught 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 airframe Section.