

Cape Cod Community College AMTS

Curriculum Subject Guide for AMT 251 Powerplant Curriculum, Subject Item 1- 4

Part 147, Appendix D, Part 1 - Subject A – Reciprocating Engines

Subject: Reciprocating Engines

Item 1. Inspect and repair a radial engine. (Level 1)

*T – 8.75 Hrs / L – 0.0 Hrs*

Item 2. Overhaul reciprocating engine (Level 2)

*T – 15.0 Hrs / L – 20 Hrs*

Item 3. Inspect, check, service, and repair reciprocating engines and engine installations. (Level 3)

*T – 20.0 Hrs / L – 36.5 Hrs*

Item 4. Install, troubleshoot, and remove reciprocating engines. (Level 3)

*T – 20.0 Hrs / L – 29.0 Hrs*

Classroom time: 63.75 hours

Lab or shop time: 85.5 hours

Test time: .75 hour

Total Time: 150 hours

Teaching Level 1, 2, 3

**Project 1**

Item 2 – 0.5 Hrs

Item 3 – 0.5 Hrs

Item 4 – 0.5 Hrs

**Project 2**

Item 2 – 0.5 Hrs

Item 3 – 1.0 Hrs

Item 4 – 0.5 Hrs

**Project 3**

Item 2 – 10.0 Hrs

Item 3 – 10.0 Hrs

**Project 4**

Item 2 – 3.0 Hrs

Item 3 – 4.0 Hrs

Item 4 – 3.0 Hrs

**Project 5**

Item 3 – 2.0 Hrs

**Project 6**

Item 2 – 4.5 Hrs

Item 3 – 9.0 Hrs

Item 4 – 9.0 Hrs

**Project 7**

Item 2 – 1.5 Hrs

Item 3 – 8.0 Hrs

Item 4 – 8.0 Hrs

**Project 8**

Item 3 – 2.0 Hrs

Item 4 – 4.0 Hrs

**Project 9**

Item 4 – 4.0 Hrs

**Theory Test 1**

0.25 Hrs

**Theory Test 2**

0.25 Hrs

**Practical Test**

0.25 Hrs

Prerequisite(s)

- (1) All General curriculum subjects (Part 147 Appendix B)

Course Interruptions: All interruptions or changes in course sequence will be in accordance with the Order of Instruction policy, located in Cape Cod Community College's Operations Manual, page 51.

Item 1:

Student Performance Goal(s)

Given:

Performance:

Standard: The student will pass a Theory Test with at least a 70% grade.

Item 2 & 3:

Student Performance Goal(s)

Given: 14 CFR, Federal Aviation Regulations for Aviation Maintenance Technicians

(Current Edition), Aviation Maintenance Technician Handbook Powerplant, Volume 1 (FAA-H-8083-32) Chapter 1; Lycoming O-320 Tear down engines; Lycoming Overhaul Manual Direct Drive Engine; Lycoming O-320 series Illustrated Parts Catalog; AeroTrain AE-30-320 Trainer; computer with internet access.

Performance: The student will classify and describe various reciprocating engines as specified in the Type Certificate Data Sheets and manufacturer's information; identify various tagged parts on an engine; remove the Oil Sump, Accessory case and all cylinders; inspect the cylinders and repair any damaged cooling fins; disassemble, inspect, and reassemble the crankcase; reassemble the cylinders; reassemble the engine; and do a post-inspection check on the O-320 test cell.

Standard: The student will accomplish all tasks with 100% adherence to the manufacturer's instructions and will pass Theory and Practical Tests with at least a 70% grade.

Item 4:

Student Performance Goal(s)

Given: 14 CFR, Federal Aviation Regulations for Aviation Maintenance

Technicians (Current Edition), Aviation Maintenance Technician Handbook Powerplant, Volume 1 (FAA-H-8083-32) Chapter 1; AeroTrain AE-25-520 Engine Removal and Replacement Trainer & Procedure Manual; Lycoming O-235, O-320, and O-540 Engine Service & Parts Manuals; Lycoming Direct Drive Overhaul Manual; Lycoming O-320 Parts Manual; Continental TSIO-520 Engine Service Manual; Piper Comanche 250 (PA-24) Service Manual; Piper Colt Flight Manual; Cessna 402C Service Manual; computer with internet access;

Performance: The student will remove the engine from the Trainer, inspect the nacelle and engine mounts, and reinstall the engine as per the Trainer Procedure Manual. The student will also use the above references to troubleshoot common engine problems.

Standard: The student will complete the removal, inspection, and reinstallation 100% as per the manufacturer's information, complete the troubleshooting scenarios with 100% accuracy, and pass the Theory and Practical Tests with at least a 70% grade.

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