



Reavis High School

Curriculum Snapshot/Cover Page for Aviation



Unit 1: Safety

5 Days

This unit focuses on safety both in the work place and at home. The major causes of accidents will be discussed. Industry and OSHA standards will also be addressed.



Unit 2: Aviation Reciprocating Engines Classification

5 Days

This unit will cover the classifications of aircraft engines cylinder arrangements and cooling types. Also discussed will be the advantages of air-cooling over liquid cooling as it applies to aircraft engines. Finally we will cover in-line and opposed engines, how they are built, and the cylinder arrangement of a radial engine.



Unit 3: Specialty Tools for Reciprocating Engine Overhaul

5 Days

This unit will cover the tools that are specific to reciprocating aircraft engines. We will cover proper vocabulary and specific application for the specialty tools needed to disassemble, assemble, and repair aircraft engines.



Unit 4: Technical Reading and Writing

5 Days

This unit will cover the documentation required by the FAA needed to complete an engine overhaul. Both reading the overhaul manual and writing proper log entries in the engine log book will be discussed. We will use engine specification charts and FAA regulations books to complete this unit.



Unit 5: Reciprocating Engine theory

10 Days

This unit covers the basic theory of internal combustion engines and how it applies to aircraft engines. The class will cover engine performance and the mathematical formulas to determine the power an engine can produce. Engine efficiency and how that is defined will also be addressed.



Unit 6: Reciprocating Engine Overhaul Disassembly

30 Days

During this unit, students will completely disassemble an aircraft engine. The unit will cover organization of parts as they are being removed from the engine, cleaning the engine parts, as well as FAA procedures required during the overhaul process.



Unit 7: Reciprocating Engine overhaul Inspection, Testing & Recommendations

35
Days

This unit will cover engine inspections required to complete an engine overhaul. Students will perform testing to determine if the aircraft engine can be returned to airworthiness. The documentation required to provide proof of airworthiness and the purpose behind each will be addressed.



Unit 8: Reciprocating Engine Overhaul Assembly

25
Days

This unit will cover the reassembly process from beginning to end. The engine will be reassembled and all torque and safety features will be replaced. We will work on independent decision making skills as related to airworthiness. We will also cover proper documentation during the rebuild.



Unit 9: Lubrication Systems - Reciprocating Engines

20
Days

This unit will cover the purpose for the lubrication system and the types of oils available for use in aircraft engines. The path of oil will be traced through the engines used in class. Then the effects of lack of oil on an engine will be addressed. The proper documentation needed for the lubrication system during overhaul will also be covered.



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Unit 10: Engine Exhaust & Power Recovery Systems

15
Days

This unit will cover the basics of a reciprocating engine exhaust system. It will also cover basic power recovery systems, such as a turbo charger and superchargers. Finally, when and why each of these systems are used and their common service and maintenance requirements will be addressed.



Unit 11: Career opportunities & Certification

5 Days

This unit will focus on the educational and certification requirements to become an Airframe & Powerplant mechanic. Career opportunities and other career options possible for an A & P certified mechanic will be discussed.