AMT A140: HELICOPTER THEORY AND OPERATIONS

Item	Value
Curriculum Committee Approval Date	12/08/2021
Top Code	095010 - Aviation Airframe Mechanics
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Rotary wing aircraft development, technology, and construction. Federal Aviation Administration (FAA) requirements for operation and maintenance. Survey of helicopter industry. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Describe the theory of flight of a helicopter along with the systems and components related to its flight and control.
2. Describe the different helicopter designs and construction and their FAA required maintenance and inspection programs.

Course Objectives

- 1. Describe the historical origins and development of rotary wing aircraft.
- 2. Describe the basic types of helicopter design and construction.
- 3. Explain the fundamental aerodynamic principles associated with helicopter flight operations.
- 4. Develop a basic vocabulary of helicopter terminology and nomenclature.
- 5. Identify major helicopter systems, components, and related theory of operation.
- 6. Explain the role of federal and state agencies having jurisdiction over private and commercial helicopter operations.
- 7. Identify and describe the basic types of FAA approved helicopter maintenance and inspection programs.
- 8. Describe the social and economic importance of commercial helicopter operations in the continental United States and overseas.

Lecture Content

History of rotary wing aircraft development Helicopter aerodynamics and nomenclature Helicopter flight control and stability systems Transmissions, drive train systems, rotors Helicopter Powerplants and accessories Airframe and utility systems Helicopter flight line operations and safety Federal and state agencies governing helicopter maintenance and operation Federal Aviation Administration helicopter maintenance and inspection standards Federal Aviation Administration approved helicopter maintenance programs and facilities

Method(s) of Instruction

- Lecture (02)

Instructional Techniques

1. Detailed multimedia/lectures of each topic covered 2. Student feedback during each lecture 3. Detailed illustrative discussion of textbook examples 4. Concentration on schematic reading and system operation fault diagnosis

Reading Assignments

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Writing Assignments

Student must show proficiency in writing logbook entries using correct punctuation, sentence structure and readability.

Out-of-class Assignments

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Demonstration of Critical Thinking

Quizzes, midterm, and final written examinations

Required Writing, Problem Solving, Skills Demonstration

Student must show proficiency in writing logbook entries using correct punctuation, sentence structure and readability.

Textbooks Resources

1. Required Federal Aviation Administration. Rotocraft Flying Handbook: FAA - H808321, ed. Newark: Aviation Supplies and Academics Inc., 2000 Rationale: -