

APT A132: AVIATION NAVIGATION

Item	Value
Top Code	302020 - Piloting
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
Grading Policy	Standard Letter (S)

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Course Description

This course provides academic background for pilots preparing for the FAA Commercial Pilot license and FAA Instrument rating. The course will cover basic visual navigation, instrument navigation, use of Global Positioning Systems and an introduction to Flight Management Computers. Current Private Pilot Certificate will be verified by the Instructor at the first class meeting. Three hours. PREREQUISITE: APT A130; current Private Pilot Certificate (verified by the instructor at the first class meeting). Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. A student who successfully completes this class will be able to explain the elements necessary to plan and execute a cross country flight under both visual or instrument flight rules.
2. The student who successfully completes this class will be able to, using an E-6B flight computer, perform calculations which solve time and distance problems, fuel consumption problems, wind drift correction problems and indicated to True Airspeed calculations.
3. The student who successfully completes this class will be able to explain the theory of Global Positioning System and its application to aircraft navigation.

Course Objectives

- 1. Solve problems by advanced methods of navigation: a. Course line computer b. Inverted navigation c. Radio navigation
- 2. Employ advanced methods to plot courses using pilotage, dead reckoning, and radio navigation.
- 3. Use flight conditions to solve in-flight calculations.
- 4. Analyze when point-to-point navigation is appropriate using GPS.
- 5. Diagnose when elements of the GPS system have failed and take appropriate actions.
- 6. Apply the principles of GPS navigation to both VFR and IFR flight planning.
- 7. Compare portable and panel mount GPS receivers and know when each would be appropriate.
- 8. Interpret the display indications of the GPS receiver to properly navigate along an airway and shoot an instrument approach.
- 9. Use flight planning skills to plan and prepare a cross-country flight log.
- 10. Explain advanced navigation systems including EFIS and FMS etc.