

Course Code: AVI 281

Course Title: Crew Resource Management

Department: Aviation

Effective Date: Summer 2026

PCS Code: 1.1 - Baccalaureate/Transfer

CIP Code: 14.0101

Repeatability: 0

Credit Hours

Catalog Notation: 3-1-3

Credit Hour Distribution:

Lecture: 3

Lab: 1

Clinical: 0

Total: 3

General Course Information

Catalog Description

Examines societal/cultural, industry, governmental regulatory agency, organizational, group, and individual influences on crew behavior and crew resource management. Laboratory and flight sections use multiengine flight simulator and multiengine aircraft. Students gain experience flying preplanned scenarios in both aircraft and simulator.

General Course Objectives

Equip multiengine pilots to apply crew resource management strategies based on research-based theory and contextualized to address practical flight scenarios and specific crew behaviors on the flight deck.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

FAA Commercial Pilot Certificate with Airplane Multiengine Land and Instrument Airplane Ratings

Methods of Evaluation

Evaluation will consist of oral and written quizzes and exams, flight performance.

Instructional Materials and Additional Supplies

Cockpit Resource Management, by Kanki, B., Helmeich, R. and Anca. San Diego, CA Press, 2010.

Course Content

General Learning Outcomes (GLOs)

- Communication: Students will demonstrate the ability to read, write, listen, and speak effectively.
- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Course Orientation	1. Explain the overall purposes of the course and course requirements for AVI 281.	1.5	0	0
Review: Checklists, Briefings, Callouts, Flows	1. Demonstrate proficient knowledge of checklists, briefings, callouts, and flows for the Piper Seminole.	3	0	0
Instrument Flight Rules Review and Use of Jeppesen Instrument Navigation Charts	1. Demonstrate proficient knowledge of instrument flight rules. 2. Demonstrate understanding and use of Jeppesen instrument charts.	4.5	0	0
Overview of Crew Resource Management (CRM)	1. Explain principles of basic cockpit resource management.	3	0	0
Group Dynamics	1. Identify major factors in group dynamics. 2. Explain how principles of group dynamics apply to cockpit resource management.	3	0	0
Communications and CRM	1. Identify major principles of communications in groups. 2. Analyze the application of communications principles in practical flight scenarios.	2	0	0
Judgment and Decision-Making in the Cockpit	1. Identify major principles of conflict management; apply these principles to management of cockpit and crew, especially in relation to the responsibilities of a pilot.	2	0	0
Stress and Conflict	1. Identify major stressors in flight situations. 2. Analyze the impact of stressors on conflict. 3. Apply conflict management principles in relation to stress-induced conflict. 4. Explain sound management approaches to reduce stress among crew members.	2	0	0
Midterm Exam	1. Demonstrate proficiency in content taught in the first half of the semester; integrate principles learned in analysis of crew resource management issues.	1.5	0	0
Situation Awareness and Error Management	1. Identify major factors leading to error in management decisions. 2. Explain strategies for increasing sensitivity to the factors underlying CRM situations. 3. Apply strategies to manage errors and mitigate the impact of errors.	2	0	0
CRM and Air Traffic Control	1. Explain management principles that enhance optimal CRM functioning in relation to Air Traffic Control.	2	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Threat and Error Management	1. Identify effective strategies for threat and error management; apply strategies appropriately.	2	0	0
Risk Assessment	1. Identify effective tools for risk assessment; apply strategies appropriately.	1.5	0	0
CRM and the Advanced Cockpit	1. Explain how CRM applies in the advanced cockpit.	1.5	0	0
Group Work, Crew Exercises	1. Demonstrate the ability to apply theory-based principles and strategies in simulated crew situations.	4.5	0	0
Safety Culture and Safety Management Systems	1. Explain the principles of developing and maintaining a culture of safety in the cockpit. 2. Apply principles to practical flight scenarios.	3	0	0
Group Presentations	1. Apply assigned CRM principles to a flight scenario using additional resources not covered in classroom instruction. 2. Demonstrate ability to analyze what went right/wrong and factors that could have possibly changed the outcome; use critical thinking and creativity to articulate workable recommendations for the future.	3	0	0
Final Exam	1. Complete final exam.	3	0	0
Flight Lesson 1: Checklist, Flows, SOPs	1. Demonstrate proficiency in the challenge/response method as it applies to the Piper Seminole checklist.	0	2	0
Flight Lesson 2: Review of Flight Planning; Introduction to Jeppesen Charts	1. Plan an IFR flight between two cities, using a DUATS weather printout and computer-based flight planning capability. 2. Present pre-planned flight.	0	2	0
Flight Lesson 3: Simulation Scenario #1 - Introduction to Crew Operations	1. Fly a portion of the pre-planned flight in Frasca 142 FTD showing proficiency in standard operating procedures and basic instrument skills.	0	2	0
Flight Lesson 4: Simulation Scenario #2 - Focus on Group Dynamics	1. Plan and execute an IFR flight in the Frasca 142 FTD between two airports. 2. Demonstrate proficiency in enroute operations, dealing with lower elevations, approach briefings and callouts, engine failure during takeoff, roll before liftoff, and other failures in flight. 3. Demonstrate application of group dynamics/teamwork.	0	2	0
Flight Lesson 5: Simulation Scenario #3 - Focus on Communications	1. Plan and execute an IFR flight in the Frasca 142 FTD between two airports. 2. Gain proficiency in high altitude operations, enroute holding procedures, engine failure after liftoff, handling weather considerations, and aircraft performance capability during the flight. 3. Demonstrate ability to communicate with fellow pilot due to lack of navigation equipment on the FO's side. 4. Demonstrate application of communication principles.	0	2	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Flight Lesson 6: Simulation Scenario #4 - Focus on Decision- making, Stress Resolution, Leadership/Followership	<ol style="list-style-type: none"> 1. Plan and execute an IFR flight in the Frasca 142 FTD between two airports. 2. Demonstrate proficiency in handling full route clearances, partial power loss enroute, complete engine failure during the missed approach, change of routing, and bad weather conditions. 3. Demonstrate application of principles in decision making, stress resolution, and leadership/followership. 	0	2	0
Flight Lesson 7: Focus on Assessment, Decision- making, Stress Resolution, Communication, Leadership/Followership	<ol style="list-style-type: none"> 1. Plan and execute an IFR flight in the Frasca 142 FTD between two airports. 2. Demonstrate proficiency in dealing with communications failures and routing near special use airspace. 	0	2	0
Flight Lesson 8: Flight Scenario #5 - High Workload - Communications Failure	<ol style="list-style-type: none"> 1. Plan and execute an IFR flight in the Piper Seminole between three airports. 	0	2	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	16	0