# **Course Alignment for AVT 2150 FlexPace (1 cr hr)**

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| **CO 1** | Comprehend and demonstrate a basic understanding of **risk management, information transfer and decision making** in UAS operations. |
| **CO 2** | Comprehend and demonstrate an understanding of **workload management, communication processes, problem solving and maintaining situational awareness when when operating within a UAS**. |
| **CO 3** | Comprehend and demonstrate an understanding of the principles, concepts and application of Crew Resource Management and the **human factors associated with the human/machine interface**. |
| **CO 4** | Comprehend, analyze, and demonstrate a basic understanding of the Crew Resource Management **Markers and their effect on managing errors.** |

**Note:** Course Objectives are institutionally mandated and taken from the [Master Syllabus](https://cmt.sinclair.edu/#reports.mastersyllabus).

# **Course Structure and Alignment**

**Note:** Topic Objectives are developed by the course coordinator to align with the Course Objectives.

| **Topic Name** | **Topic/Module Objectives** | **CO #** | **Materials** | **Activities** | **Assessments** |
| --- | --- | --- | --- | --- | --- |
| **1** | **Unit 1 | What is CRM** | TO 1 Describe the development and significance of Crew Resource Management (CRM) | 1, 2, 4 | * Chapter 1
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 2 Describe Group Dynamics and Performance Factors in CRM | 1, 2, 4 | * Chapter 1
* Learning Activities
 | * Rad assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 3 Identify the components that make up the SHEL Model. | 1, 2, 4 | * Chapter 1
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 4 Compare the application of CRM across various domains | 1, 2, 4 | * Chapter 1
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| **2** | **Unit 1 | Teamwork and Organizational Factors** | TO 1 Describe the role of teamwork in CRM | 1,2 | * Chapter 2
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 2 Analyze the impact of organizational philosophy on CRM | 1,2 | * Chapter 2
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 3 Explain the components of the Four P's Model and Threat and Error Management Model and their relevance to CRM | 1,2 | * Chapter 2
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| **3** | **Unit 1 |** **Crews as Groups** | TO 1 Evaluate the advantages of group/team performance over individual performance | 1,2 | * Chapter 3
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 2 Identify the common elements of successful groups/teams | 1,2 | * Chapter 3
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| TO 3 Examine the role of leadership in group/team formation and development | 1,2 | * Chapter 3
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 1 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 1 Post-Assessment (if needed)
 |
| **4** | **Unit 2 | Communication and CRM** | TO 1 Define the communication concept and the application of effective communication in CRM | 2 | * Chapter 4
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 2 Described the challenges and importance of effective communication | 2 | * Chapter 4
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resource
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 3 Analyze the Information Transfer Model and barriers to effective communication | 2 | * Chapter 4
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| **5** | **Unit 2 | Decision Making** | TO 1 Describe the Naturalistic Decision-Making (NDM) and its theoretical foundations | 1,4 | * Chapters 5
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 2 Identify components of the Aviation Decision Process Model | 1,4 | * Chapters 5
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 3 Describe the Course of Action (COA) decision process and factors influencing decisions | 1,4 | * Chapters 5
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 4 Analyze the dynamics of decision-making errors and skills for effective decision-making | 1,4 | * Chapters 5
* Learning Activities
 | * Read assigned textbook chapter
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| **6** | **Unit 2 | Regulatory Perspective and CRM Training** | TO 1 Identify Flight Crew Procedures that promote good CRM | 1,2 | * Chapters 16
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 2 Identify the components and basic concepts of CRM training | 1,2 | * Chapters 16
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 3 Describe the structure and content of CRM training and fundamentals training implementation | 1,2 | * Chapters 16
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
| TO 4 Identify the fundamentals CRM training implementation | 1,2 | * Chapters 16
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
 |
|  | TO 5 Explain the FAA’s role in CRM training | 2 | * Chapters 16
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
* **Final Paper Abstract (approved by instructor) [**
* **CRM Scenario 1**
 | * Unit 2 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 2 Post-Assessment (if needed)
* Final Paper Abstract (approved by instructor)
* CRM Scenario 1
* Final Paper
 |
| **7** | **Unit 3 | Accident Investigator’s Perspective** | TO 1 Describe the role of accident investigation in aviation and the development of CRM | 2, 3 | * Chapters 18
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 2 Describe key concepts of Leadership, Communications, and Following SOPs as it relates to aviation accidents | 2, 3 | * Chapters 18
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 3 Define key concepts of Situational Awareness related to CRM and aviation accidents  | 2, 3 | * Chapters 18
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 4 Identify the elements of the Human Factors Analysis and Classification System (HFACS) categories. | 2, 3 | * Chapters 18

Learning Activities | * Read assigned course material
* Review topic resources

Prepare for and complete assessments and quizzes | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)

Unit 3 Post-Assessment (if needed) |
| **8** | **Unit 3 |** **Human Factors** | TO 1 Analyze the role of human factors in aviation accidents. | 3 | * Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 2 Describe the factors that affect human performance in UAS operations. | 3 | * Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 3 Identify historical statistics related to UAS accidents and human factors. | 3 | * Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| **9** | **Unit 3 | UAS-specific CRM Issues** | TO 1 Identify unique CRM issues that apply to UAS Operations | 3 | * Chapters 21
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 2 Analyze the role of the pilot interface, automation, and human-machine teaming in UAS operations | 3 | * Chapters 21
* Learning Activities
 | * Read assigned course material
* Review topic resources
* Prepare for and complete assessments and quizzes
 | * Unit 3 Pre-Assessment
* Topic Quizzes (if needed)
* Unit 3 Post-Assessment (if needed)
 |
| TO 3 Describe the challenges of UAS operations in terms of Situations Awareness | 3 | * Chapters 21
* Learning Activities
 | * **Complete Case Study assignment**
* **CRM Scenario 2**
 | * **Case study assignment**
* **CRM Scenario 2**
 |
| **10** | **Unit 4 | Final Paper and Exam** |  | 1, 2, 3, 4 | * Previously assigned textbook chapters and course material
 | * + Read paper requirements
	+ Review all course material
 | * + Final Paper
	+ Final exam
 |