

## Master Syllabus

### AVT 2240 - Human Factors in Aviation

**Division:** Science, Mathematics and Engineering

**Department:** Aviation Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 3.0

**Prerequisite(s):** DEV 0035

**Date Revised:** April 2015

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### Course Description:

Provides pilots and other aviation professionals with an in-depth knowledge of human performance capabilities and limitations and their relationship with aircraft systems operation. Automation and human errors, fatigue, diet, motivation and learning, training principles, human sensory capabilities and limitations, supervisory control and Crew Resource Management (CRM) are among the topics this course will address.

### General Education Outcomes:

- Oral Communication Competency
- Written Communication Competency
- Critical Thinking/Problem Solving Competency
- Values/Citizenship/Community Competency
- Computer Literacy Competency
- Information Literacy Competency

### Course Outcomes:

#### Human information processing

Demonstrate an understanding of theories of human information processing.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination

**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires

**Performance Criteria:**

Score 65% or higher on term paper

#### Fatigue and motivation

Demonstrate an understanding of the effects of fatigue and motivation on human performance errors.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination

**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires

**Performance Criteria:**

Score 65% or higher on term paper

#### Human performance capabilities and limitations

Demonstrate an understanding of the effects of physiology, psychology, and the environment on human performance.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination

**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires

**Performance Criteria:**

Score 65% or higher on term paper

#### Ergonomic principles

Demonstrate an understanding of ergonomic principles and guidelines.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination  
**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires  
**Performance Criteria:**

Score 65% or higher on term paper

### **Principles of learning**

Demonstrate an understanding of the principles of learning, the acquisition of skills and knowledge, and the development of attitudes.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination  
**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires  
**Performance Criteria:**

Score 65% or higher on term paper

### **Human errors**

Demonstrate an understanding of the causes of human error, and the effects of errors on aviation accidents.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination  
**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires  
**Performance Criteria:**

Score 65% or higher on term paper

### **Safety and performance improvements**

Identify methodologies to improve human performance, efficiency, and safety in aviation.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination  
**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires  
**Performance Criteria:**

Score 65% or higher on term paper

### **Human sensory capability**

Demonstrate knowledge of human sensory input modes (e.g., eyes, ears, nose, and touch).

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

Score 65% or higher on exams

**Assessment Method:** Oral examination  
**Performance Criteria:**

Score 65% or higher on oral presentation

**Assessment Method:** Written surveys and/or questionnaires  
**Performance Criteria:**

Score 65% or higher on term paper

### **Outline:**

Human sensory capability  
Human information processing  
Human performance capabilities and limitations  
Ergonomic principles  
Principles of learning  
Fatigue and motivation

Human errors  
Safety and performance improvements