

Course Competency

AVM 2166 Human Factors in Aviation Maintenance

Course Description

The Human Factors in Aviation Maintenance will identify and optimize factors that affect the human performance within aviation maintenance. It covers the science of understanding the properties of human capability and the need to design, develop, and implementation of systems and services to the successful application of human factors principles in aviation maintenance. It integrates the technical skills of maintenance, basic human factors knowledge, improves communication effectiveness, and heightens safety in the aircraft maintenance environment. (3 hr. lecture)

Course Competency	Learning Outcomes
<p>Competency 1: The student will demonstrate knowledge and understanding of human factors in maintenance and its safety measures by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Cultural / Global Perspective 5. Social Responsibility 6. Ethical Issues 7. Computer / Technology Usage 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Identifying and analyzing with the Federal Aviation Administration (FAA), most current, Maintenance Human Factors Training Advisory Circular. 2. Distinguishing the Active Failures and the immediate effects in a system. 3. Recognizing and analyzing cause and effect factors. 4. Interpreting information about human abilities, limitations, and other factors characteristics. 	
<p>Competency 2: The student will demonstrate knowledge and understanding of the twelve most common aviation maintenance-related causes of errors by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Cultural / Global Perspective 5. Social Responsibility

	<ol style="list-style-type: none"> 6. Ethical Issues 7. Computer / Technology Usage 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Identifying the Dirty Dozen preconditions, conditions, and precursors in maintenance accidents and incidents. 2. Recognizing the physical and mental exhaustion as it relates to work performance. 3. Evaluating the role of assertiveness in human factors. 4. Interpreting aircraft systems to compensate for human limitations to avoid human errors. 	
<p>Competency 3:The student will demonstrate knowledge and understanding the relationship of ergonomics to other elements of a human factors program by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Cultural / Global Perspective 5. Social Responsibility 6. Ethical Issues 7. Computer / Technology Usage 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Differentiating training programs, policies and procedures, and Personal Protective Equipment (PPE) as related to aviation maintenance. 2. Identifying the importance for specialized tooling for inspection and technology. 3. Recognizing the impact of environmental factors, working conditions, lighting, and general working conditions. 4. Distinguishing the effects of human interactions with factors to design optimizing human well-being and overall performance. 	
<p>Competency 4:The student will demonstrate knowledge, understanding, and recognition of the regulatory requirements related to human factors, work place safety, and its management system by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy

	<ol style="list-style-type: none"> 4. Cultural / Global Perspective 5. Social Responsibility 6. Ethical Issues 7. Computer / Technology Usage 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Recognizing the aviation safety culture as the primary priority. 2. Distinguishing and analyzing business approaches on managing safety risk with systematic approaches within organizational structures, accountabilities, policies and procedures. 3. Interpreting human factors programs applicability to aircraft maintenance. 4. Differentiating application of technical knowledge, tasks performance, and the human factor engineering principles. 	
<p>Competency 5: The student will demonstrate knowledge and understanding of human error and fatigue by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Cultural / Global Perspective 5. Ethical Issues 6. Social Responsibility 7. Computer / Technology Usage 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Recognizing methods to reduce human/ maintenance error versus system error. 2. Inferring safety strategy and structured processes with maintenance errors that may lead to additional errors. 3. Recognizing fatigue and its relation to human factors in maintenance. 4. Recognizing work conditions that produce physical and mental fatigue. 5. Distinguishing fatigue concepts, lack of attention, contributing to accidents from maintenance error. 	

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