

Aviation Occupational Health and Safety

AE-104	Credit Hours 1-0
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COURSE DESCRIPTION:

The course "Aviation Occupational Health and Safety " provides comprehensive knowledge and understanding of various aspects related to industrial safety, human factors, and hazard management. Students will explore the importance of safety in an industrial setting, the implications of accidents, and the incidence of fire incidents. The course emphasizes the need to consider human factors in safety management and delves into human performance and limitations, social psychology, and factors affecting performance.

TEXT AND MATERIAL

Textbooks:

1. Fundamentals of Occupational Safety and Health, Latest Available Edition, Mark A. Friend and James P. Kohn
2. J. Ridley, *Safety at Works*, 4th Edition, Butter Worths Publishers
3. K.G. Lockyer, *Factory & Production Management*, Pitman Publishing
4. Human Factors by Aviation Maintenance Technician Certification Series Latest Available Edition
5. Digital Techniques Electronic Instruments by Aviation Maintenance Technician Certification Series, Latest Available Edition
6. Maintenance Practices by Aviation Maintenance Technician Certification Series, Latest Available Edition
7. Human Factors by Aviation Maintenance Technician Certification Series, Latest Available Edition

Reference Material:

1. Enhancing Occupational Safety and Health, Geoff Taylor, Kellie Easter & Roy Hegney, Elsevier Latest Available Edition
2. Risk Management: For Occupational Health and Safety (Safety at Work Volume 2) (Volume 2) by Ridley, J. & Channing, J Latest Available Edition
3. The Manager's Guide to Health & Safety at Work, 8th Edition, Jeremy Stranks, Latest Available Edition

PREREQUISITE:

Nil

ASSESSMENT SYSTEM:

ASSESSMENT	WEIGHTAGE
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Quizzes	10-15%
Assignments / Mini Projects	05-10%
MSE	30-40%
ESE	40-50%

TOPICS COVERED

WeekNo	Description
1	<p>Introduction of Health and Safety,</p> <ul style="list-style-type: none"> • Industrial Safety: • introduction objectives of Safety, • Importance of Safety in an industry, • Industrial accidents, • Effects of accidents, • Types of accidents incidence of fire. • Fire prevention and control.
2	<p>9.1 General The need to take human factors into account; Incidents attributable to human factors/human error; 'Murphy's' law</p> <p>9.2 Human Performance and Limitations Vision; Hearing; Information processing; Attention and perception; Memory; Claustrophobia and physical access.</p>
3	<p>9.3 Social Psychology Responsibility: individual and group; Motivation and de-motivation; Peer pressure; 'Culture' issues; Team working; Management, supervision and leadership.</p>

4	<p>9.4 Factors Affecting Performance</p> <p>Fitness/health; Stress: domestic and work related; Time pressure and deadlines; Workload: overload and underload; Sleep and fatigue, shiftwork; Alcohol, medication, drug abuse.</p>
5	<p>9.5 Physical Environment</p> <p>Noise and fumes; Illumination; Climate and temperature; Motion and vibration; Working environment.</p>
6	<p>9.6 Tasks</p> <p>Physical work; Repetitive tasks; Visual inspection; Complex systems.</p>
7	<p>9.7 Communication</p> <p>Within and between teams; Work logging and recording Keeping up to date, currency; Dissemination of information.</p>
8	<p>9.8 Human Error</p> <p>Error models and theories; Types of error in maintenance tasks; Implications of errors (i.e. accidents); Avoiding and managing errors.</p>

9	MID TERM EXAM
10	<p>Techniques of Safety Management:</p> <ul style="list-style-type: none"> • Principles of accident prevention, • hazard analysis. • Legal, humanitarian and economic reason for action. • Safety inspection procedures. • Safety training, • First aid and emergency procedures.
11	<p>Accidents Causes and Investigations</p> <ul style="list-style-type: none"> • Concept of Risk, Incidents and Accidents • Accident Causation Theories • Incident Investigations
12	<p>Environment and Health:</p> <ul style="list-style-type: none"> • Introduction: • importance of clean environment, • Scale of Environmental Pollution. • Environmental Act. • Health and Safety Act. <p>9.9 Hazards in the Workplace Recognizing and avoiding hazards; Dealing with emergencies</p>
13	<p>Atmospheric Pollution:</p> <ul style="list-style-type: none"> • Types of Atmospheric pollution, • Their Causes and Effects on Human Health, • Available Technologies for Controlling Pollution. <p>Noise Pollution:</p> <ul style="list-style-type: none"> • Measurement of Noise level, • Effect of excessive noise on human health. • Remedial Measures.
14	<p>Fire Prevention and Protection</p> <ul style="list-style-type: none"> • Fire Tetrahedron • Categories of Fires and Extinguishers • Standards and Codes • DOT Marking System • OSHA Regulations

15	<p>ISO Standards for Safety and Health and Environment</p> <p>Special handling of components sensitive to electrostatic discharges;</p> <p>Awareness of risks and possible damage, component and personnel anti-static protection devices.</p> <p>Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programmes.</p>
16	<p>Industrial Waste:</p> <ul style="list-style-type: none"> • Solid Waste, • Industrial Effluents and Waste Gases, • waste treatment plants. <p>Hazardous Materials</p> <ul style="list-style-type: none"> • Background and Introduction • Obtaining EPA Identification Number • Managing Hazardous Waste on Site • Hazard Communication Standard • Contingency Plans • Hazardous Waste Disposal
17	<p>Psychology and Safety: The Human Element</p> <ul style="list-style-type: none"> • Basic Terminology • Motivation • Applying Motivation Theories • Organizational Environment and Safety Culture • Incentives versus Inherent Reinforcement • Employee Empowerment and Job Enrichment <p>Improving Safety Performance with Behavior based safety</p> <ul style="list-style-type: none"> • Basic Definitions and Terminology • Principles and Strategies of Behavioral Safety • Common problems with safety efforts <p>Implementing Behavioral Approaches and Safety Coaching</p>
18	FINAL EXAM