Course Description

Human error is implicated in most, if not all, accidents and near misses. Worldwide industries which require high reliability are taking a Human Factors approach to increasing safety within their workplaces. This course teaches the required material to understand the causes and management of human error in complex systems such as aviation, health care, and manufacturing to name a few.

The course starts with an introduction to human factors theories and concepts to provide some background to the topic pertinent to the aerospace industries. This is followed by an introduction to the taxonomy for categorizing different types of errors – conducive to establishing a useful database for analysis. The course will cover the various factors which tend to make humans make mistakes including the ability to process information, deal with challenging environments, and perform within a potentially sub-optimal and complex workplace such as those in the aerospace businesses. Training and negative transfer, as well as procedures, will also be presented as additional factors leading to human error.

Following this, an overview of dominant error management systems and approaches to dealing with human error in complex systems is presented using different models of human error (cognitive, SHEL, behavioral, etc…) as organizing frameworks. Human Factors analysis and Classification Systems (HFACS), an established method for identifying causes of errors, will be introduced. Lastly, building on the material presented, the course will then provide an integrated approach to avoiding the factors that lead to error, reducing the number of errors made and mitigating the effects of errors that slip through established defense mechanisms.

Who Should Attend

This course will be directly pertinent to:

- Senior executives, managers and supervisors with responsibility and accountability for or Quality and Safety.
- Health & Safety personnel in all aviation industries
- Health and safety professionals would benefit from knowledge in human factors and ergonomics

How You Will Benefit

- This course provides participants with fundamental concepts of human factors and a solid foundation of the recognition of ‘Human Error’ issues and a process to discover them.
- You will have a good understanding of human capabilities and limitations and how this impacts performance.
- In depth knowledge of those factors (stress, fatigue, illness, etc…) which lead to error.
- How to classify errors in a coherent and meaningful fashion for analysis.
- How to develop targeted interventions for meaningful error management within a safety management system.
- Practical examples and case studies will enhance theoretical knowledge.

To register, please visit www.unisim.edu.sg/CETevent

Organised by: SIM UNIVERSITY
Date of Event
8 – 10 April, 2015

Time
9 am – 5 pm

Venue
SIM University, 461 Clementi Road Singapore 599491

Course Fee
S$1,550.00 (before GST)

Registration and Payment
Participants have to register online and payment can be made online or over the counter by the closing date (19 March 2015) for confirmation of registration. Nets and credit card payments are accepted. All cheques and bank drafts must be made payable to 'SIM University', crossed and marked ‘A/C Payee only’. The course title must be written on the back of the cheque and sent to our mailing address. Walk-In registration is subject to seats availability.

Withdrawal and Refund of fees
There will be no refund of fees for withdrawal. The organiser reserves the right to make any changes to the programme and to reject any application for registration.

For Payment and Enquiries
SIM University
Centre for Continuing and Professional Education (CCPE)
461 Clementi Road
Singapore 599491
Attention: Ms Elise Phang (elisephangic@unisim.edu.sg)
Tel: 6248 1616

To register, please visit www.unisim.edu.sg/CETevent
Closing date: 19 March 2015

Instructor’s Profile
Dr. Albert Boquet is an Associate Professor, Human Factors & Systems, Daytona College of Arts and Sciences, Embry-Riddle Aeronautical University, USA.

Prior to joining Embry-Riddle, Dr Boquet was a principal investigator for the Federal Aviation Administration where he conducted research on the effects of stress, shift work and fatigue on both the air traffic and flight deck divisions. Dr Boquet’s research focus is on using the Human Factors Analysis and Classification System (HFACS) to better understand the physiological mechanisms of stress and fatigue; and the resultant outcomes. Dr. Boquet has presented and published numerous papers on the relationship between stress and the cardiovascular and neuroendocrine systems, performance in high demand environments, sleep/fatigue, and fatigue countermeasures, as well as the human factors associated with aviation accidents, and more recently, in the operating theatres.

Topic 1: Human Factors – an Introduction
- Definition of HF
- Role of HF in complex systems
- Integrating HF into complex systems

Topic 2: Stress and Fatigue
- Circadian rhythm
- Shiftwork and jet lag (circadian dysrhythmia)
- Fatigue and performance
- Managing fatigue and shiftwork
- Stress
- Mental workload
- Stress and performance

Topic 3: Culture and Safety
- Safety Culture: A brief history
- Safety Culture perspectives
- Just culture
- Operationalizing Safety Culture
- Assessing safety culture

Topic 4: Threat and error management/Team training
- Crew Resource Management (CRM): An Overview
- CRM breakdowns in commercial aviation
- Training for effective CRM
- Situational awareness in flight operations
- Defining and measuring Situation Awareness (SA) (Endsley; Wickens)
- Training for SA

Topic 5: Human error
- Sources of error
- Models of human error: SHEL, Reason, Resilience Engineering, etc.
- Error classification systems
- The advantages and disadvantages of classification
- How these taxonomies shape our impressions of human error

Topic 6: Human Error Causes and Reduction Methods
- A systems approach to identifying the causes of human error
- Defining the threat
- The using data to develop targeted interventions
- Determining which level of intervention to reduce error in the organization

Topic 7: HFACS/HFIX
- Introduction to the Human Factors Analysis and Classification System
- Classifying human error using HFACS
- Introduction to the Human Factors Intervention Matrix
- Developing nanocodes
- Using HFIX to target interventions for reducing human error
- Tracking the effectiveness of your program

Topic 8: Case studies. Individual and Team Exercises
- Uncontrolled Collision with Terrain: Air Transport International
- TAESA, Controlled Flight into Terrain
- Scenic Air Tours; CFIT

Assessment Component
Participants will be assessed by a series of individual and group exercises aimed at providing guided experience in applying the theory and principles conveyed in the course. The class will culminate with a group presentation of a human factors analysis of commercial airline accident. This will give the students an opportunity to analyze, apply analysis techniques, and reinforce the lessons learned in the course.