

COURSE OVERVIEW HE0221-3D **Human Factors Engineering**

Course Title

Human Factors Engineering

Course Date/Venue

August 16-18, 2026/Online Virtual Training

Course Reference

HE0221-3D

Course Duration/Credits

Three days/1.2 CEUs/12 PDHs



Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops

This course is designed to provide participants with a detailed and up-to-date overview of Human Factors Engineering. It covers the importance of human factors engineering in safety-critical industries; the physical capabilities, biomechanical limitations, cognitive capabilities, mental processing, sensory systems, human performance variability and reliability; the human error and performance, cognitive human factors and physical ergonomics and workplace design; the international HFE standards and guidelines, OSHA, ISO, and industry-specific requirements; and the regulatory expectations for human-centered design, compliance strategies and best practices.



During this interactive course, participants will learn the human-system interaction, human factors in process and system design and human reliability analysis (HRA); the causes and effects of fatigue, stress and its impact on decision-making, shift work and circadian rhythm disruption and fatigue risk management systems; the human factors in control rooms and operations, communication and team performance and human factors in incident investigation; the human factors assessment tools, organizational human factors and human factors in automation, digital systems and high-risk industries; the emergency preparedness and crisis management, safety culture and behavioral safety; establishing an HFE management framework and integrating HFE into projects and operations; and the human factors audits, performance metrics, continuous improvement and monitoring.



Course Objectives/Outcomes & Benefits for the Participants

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a good working knowledge on human factors engineering
- Discuss human factors engineering and its importance in safety-critical industries
- Identify physical capabilities, biomechanical limitations, cognitive capabilities, mental processing, sensory systems, human performance variability and reliability
- Recognize human error and performance, cognitive human factors and physical ergonomics and workplace design
- Review international HFE standards and guidelines, OSHA, ISO and industry-specific requirements, regulatory expectations for human-centered design as well as compliance strategies and best practices
- Carryout human-system interaction, human factors in process and system design and human reliability analysis (HRA)
- Identify the causes and effects of fatigue, stress and its impact on decision-making, shift work and circadian rhythm disruption and fatigue risk management systems
- Discuss human factors in control rooms and operations, communication and team performance and human factors in incident investigation
- Recognize human factors assessment tools, organizational human factors and human factors in automation, digital systems and high-risk industries
- Apply emergency preparedness and crisis management as well as safety culture and behavioral safety
- Establish an HFE management framework, integrate HFE into projects and operations and apply human factors audits, performance metrics, continuous improvement and monitoring

Who Should Attend

This course is intended for engineers, psychologists, medical professionals, managers and others interested in human factors, ergonomics, human-computer interaction or usability. The course is also applicable for mechanical engineers, electrical engineers, chemists and others for whom human use of systems is a concern. Further, the course is a must for all HSE staff.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

-  The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **1.2 CEUs** (Continuing Education Units) or **12 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Peter Christian is an **International Expert** in **Safety, Health, Environmental and Quality** with over **30 years** of practical and industrial experience in **NEBOSH International General Certificate in Occupational Health & Safety, Lifting & Rigging Equipment HAZOP, HAZWOPER, HAZMAT, HAZCOM, PHA (Process Hazard Analysis), FMEA, HAZID, ISO 14001, OHSAS 18001, ISO 9001, Process Safety Management (PSM), Safety, Health, Environmental & Quality Management (SHEQ), Behavioral Safety Management, Industrial Hygiene, Human Factors**

Engineering, Risk Assessment, Fire Fighting, Rope Rescue Operations, Emergency Response within process industries. He is currently the **President of NKWE** and spearheads the companies major projects and business ventures, where he specializes in the areas of **SHEQ solutions, ISO, Quality Control and OSHA systems**. Previously, he has had much on-hand experience in the initiation and management of projects (technical as well organizational development) including involvement in **design of process plants; the commissioning & decommissioning of process plants; the operational and financial responsibility for large process operations; risk management; operational and maintenance management, crisis and emergency management, accident investigation, risk assessment, hazard identification and emergency preparedness & response** (oil spillage and gas explosions).

Much earlier in his career, Mr. Christian was a **HAZOP Team Leader** for numerous **HAZOP** studies and he has further managed the **Health, Safety & Environmental and Quality** requirements of a large process company. This included responsibilities as an auditor for compliance against **SHEQ standards, ISO standards** and the **Fatal Risk Control Protocols**. He then facilitated the development and implementation of the above standards as a group and at site level as part of the SHEQ council. Moreover, he established, trained and led a Rope rescue team and a high level emergency care clinic and ambulance service for many years. He still abseils recreationally and leads adventure groups during abseiling activities and serves as a rescue team member for mountain and water emergencies.

During his career life, Mr. Christian has gained his practical and field experience through his various significant positions as the **Plant Manager, Project Metallurgist, Metallurgist, HSE Team Leader, SHEC Superintendent, Mentor, Instructor/Trainer, Acting Technical Manager, Process Plant Superintendent, Acting Project Leader, Acting Plant Superintendent, Appointed Health & Safety & Environmental Superintendent, Production Technician, Acting Senior Shiftsman, Foreman and Learner – Official Extraction Metallurgy** from various companies such as the NKWE Consulting, SAMANCOR, Middleburg Mine Services (Pty) Ltd., Koomfontein Mines, Emelo Mine Services, Gencor Group and South African Defence Force.

Mr. Christian has a **Postgraduate Studies in Advanced Executive Programme** and a **National Higher Diploma (NHD) & a National Diploma in Extraction Metallurgy**. He is also a **Certified/Registered Tutor** in **NEBOSH International General Certificate, Certified Auditor** in **OHSAS 18001, ISO 14001 & ISO 9001**, a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, a **Six Sigma Black Belt Coach** and holds a Certificate in Facilitate Learning Using a Variety of Given Methodologies **NQF Level 5 (EDTP-SETA)** as a **Certified Facilitator**. He has further delivered innumerable courses, trainings, workshops and conferences globally.

Virtual Training (If Applicable)

If this course is delivered online as a Virtual Training, the following limitations will be applicable:-

Certificates	Only soft copy certificates will be issued to participants through Haward's Portal. This includes Wallet Card Certificates if applicable
Training Materials	Only soft copy Training Materials (PDF format) will be issued to participant through the Virtual Training Platform
Training Methodology	80% of the program will be theory and 20% will be practical sessions, exercises, case studies, simulators or videos
Training Program	The training will be for 4 hours per day starting at 0930 and ending at 1330
H-STK Smart Training Kit	Not Applicable
Hands-on Practical Workshops	Not Applicable
Site Visit	Not Applicable
Simulators	Only software simulators will be used in the virtual courses. Hardware simulators are not applicable and will not be used in Virtual Training

Course Fee

US\$ 1,875 per Delegate + VAT.

Course Program

The following program is planned for this course. However, the course instructor may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 16th of August 2026

0930 – 0935	<i>Registration, Coffee, Welcome & Introduction</i>
0935 - 0945	<i>PRE-TEST</i>
0945 – 1000	<i>Introduction to Human Factors Engineering</i> <i>Definition and Evolution of Human Factors Engineering • Relationship between Humans, Machines, and Systems • Importance of HFE in Safety-Critical Industries • Key Objectives and Benefits of HFE Programs</i>
1000 - 1030	<i>Human Capabilities & Limitations</i> <i>Physical Capabilities and Biomechanical Limitations • Cognitive Capabilities and Mental Processing • Sensory Systems: Vision, Hearing, and Touch • Human Performance Variability and Reliability</i>
1030 - 1035	<i>Break</i>
1035 - 1130	<i>Human Error & Performance</i> <i>Types of Human Error: Slips, Lapses, and Mistakes • Violations and Unsafe Behaviors • Human Reliability Concepts and Error Probability • Factors Influencing Human Performance</i>



1130 – 1200	Cognitive Human Factors <i>Attention, Perception, and Situational Awareness • Decision-Making under Stress and Uncertainty • Mental Workload and Cognitive Overload • Memory, Learning, and Information Processing</i>
1200 - 1230	Physical Ergonomics & Workplace Design <i>Anthropometry and Body Dimensions • Posture, Movement, and Musculoskeletal Disorders • Workplace Layout and Ergonomic Principles • Manual Handling and Repetitive Motion Risks</i>
1230 – 1235	Break
1235 – 1300	Human Factors Standards & Regulations <i>International HFE Standards and Guidelines • OSHA, ISO, and Industry-Specific Requirements • Regulatory Expectations for Human-Centered Design • Compliance Strategies and Best Practices</i>
1300 - 1325	Human-System Interaction <i>Human-Machine Interface Concepts • Automation and Operator Interaction • Alarm Systems and Operator Response • Designing Systems for Usability and Safety</i>
1325 – 1330	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1330	End of Day One

Day 2: Monday, 17th of August 2026

0930 – 1000	Human Factors in Process & System Design <i>Human-Centered Design Methodologies • Designing for Operator Efficiency and Safety • Integrating HFE into Engineering Lifecycle • Design Review and Usability Evaluation Techniques</i>
1000 - 1030	Human Reliability Analysis (HRA) <i>Principles of Human Reliability Analysis • HRA Methods and Techniques • Error Identification and Quantification • Applications in Risk Assessment and Safety Studies</i>
1030 – 1035	Break
1035 – 1130	Fatigue, Stress & Human Performance <i>Causes and Effects of Fatigue • Stress and Its Impact on Decision-Making • Shift Work and Circadian Rhythm Disruption • Fatigue Risk Management Systems</i>
1130 - 1200	Human Factors in Control Rooms & Operations <i>Control Room Layout and Console Design • Alarm Management and Prioritization • Operator Workload Assessment • Emergency Response and Abnormal Situations</i>
1200 – 1230	Communication & Team Performance <i>Communication Barriers and Failures • Team Coordination and Collaboration • Crew Resource Management (CRM) Concepts • Leadership and Supervisory Influence on Safety</i>
1230 - 1235	Break
1235 - 1310	Human Factors in Incident Investigation <i>Human Factors Contribution to Incidents • Root Cause Analysis Techniques • Organizational and Latent Failures • Learning from Accidents and Near Misses</i>



1310 – 1325	Human Factors Assessment Tools Task Analysis and Job Safety Analysis • Workload Assessment Techniques • Usability Testing and Evaluation Methods • Observation, Interviews, and Surveys
1325 – 1330	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1330	End of Day Two

Day 3: Tuesday, 18th of August 2026

0930 – 1000	Organizational Human Factors Safety Culture and Organizational Behavior • Management Systems and Human Performance • Organizational Influences on Human Error • Building Resilient Organizations
1000 – 1030	Human Factors in Automation & Digital Systems Automation Benefits and Limitations • Human-Automation Interaction Challenges • Artificial Intelligence and Operator Trust • Cybersecurity and Human Behavior Considerations
1030 – 1035	Break
1035 – 1115	Human Factors in High-Risk Industries Oil & Gas and Process Industry Applications • Aviation and Transportation Human Factors • Healthcare and Medical Error Prevention • Construction and Industrial Safety Applications
1115 – 1200	Emergency Preparedness & Crisis Management Human Behavior during Emergencies • Decision-Making in Crisis Situations • Emergency Communication Effectiveness • Designing Emergency Procedures and Drills
1200 – 1230	Safety Culture & Behavioral Safety Principles of Behavioral Safety • Safety Leadership and Accountability • Observation and Feedback Systems • Developing Proactive Safety Behaviors
1230 – 1235	Break
1235 – 1300	Human Factors Program Development Establishing an HFE Management Framework • Integrating HFE into Projects and Operations • Human Factors Audits and Performance Metrics • Continuous Improvement and Monitoring
1300 – 1310	Case Studies & Practical Workshops Analysis of Major Industrial Accidents • Human Error Case Study Evaluations • Group Exercises and Scenario Analysis • Practical Recommendations and Lessons Learned
1310 – 1315	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1315 – 1330	POST-TEST
1330	End of Course



Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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