

Human Factors in Design and Operations

Purpose

The purpose of this module is to explain how an understanding of human abilities, limitations and needs can be applied to the design and assessment of tasks, equipment, systems and processes, in order to reduce human error, improve safety and increase efficiency. It also highlights how and why human errors occur, and describes the methods, tools and techniques that can be used to identify, analyse and reduce them. Key Human Factors tools and methodologies will be demonstrated through the use of "real world" practical examples from high hazard industries.

At the end of the course you will be able to

1. Analyse the part played by individual, task and organisational factors in achieving safe and effective designs, systems and processes
2. Demonstrate how Human Factors should be integrated within a project/ design lifecycle process for high hazard industries and discuss the key Human Factors inputs and activities that are typically required.
3. Analyse the potential causes of human errors and violations and discuss the measures that can be taken to reduce them.
4. Evaluate the different techniques and approaches available for qualitative and quantitative human error identification, assessment and error reduction.

Outline content

Introduction to Human Factors

- Definition and scope of Human Factors
- Individual, job and organisational factors

Human Factors integration (HFI)

- The benefits of applying Human Factors
- Regulatory requirements
- Definition of HFI
- Implementing HFI within a project, facility or organisation

Human Factors support to the design lifecycle for high hazard industries

Defining human error

- Human error and violations
- Error identification, root cause analysis and HF contribution to accidents / incidents
- Performance shaping factors

Human Reliability Analysis (HRA)

- HRA steps and comparison of techniques
- Task analysis
- Human error identification
- Human error assessment
- Human error mitigation and reduction

Recommended prior study

Education, skills or experience equivalent to undergraduate level

Who should attend

Managers, supervisors and HSE professionals.

Delivery Methods

Face-to-face, Distance Learning, or Blended Learning

Levels of Assessment

- Attendance only
- Assessment by Risktec
- Risktec Professional Qualifications
- Postgraduate Qualifications: PgCert, PgDip and MSc

Assessment details

Postgraduate programmes: activities and assignment (total about 80 hours)

RPQ programmes: assignment (about 15 hours)

Module details

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| Level | Masters/RPQ |
| Duration | 2 days (F2F), 8 weeks (Postgraduate or RPQ DL) |

Price

For prices and further information, or to book a course, please contact **Vicky Billingham** at training@risktec.tuv.com

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