

# Competency Accreditation Application

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(Example application for illustration of the scheme)

## Identification of the Module

**Module Name:** Hazard and Risk Assessment (HRA)

### Nature of the Module:

HRA is a formal teaching module delivered by the University of York. It forms part of the MSc Safety Critical Systems Engineering and Postgraduate Certificate in System Safety Engineering programmes. It may be taken as a “one off” CPD module by non-enrolled students, either with or without the attached assessment.

### Where the Module is Defined:

The module is defined in the taught course student handbook:

<http://www.cs.york.ac.uk/hdbk/>

The module description can also be found on the module page:

<http://www.cs.york.ac.uk/postgraduate/modules/hra.html>

### Change Management:

Any changes to the module which alter the learning objectives must be made with the approval of the Department of Computer Science Board of Studies. Major programme changes must be approved by the University Teaching Committee.

## Competencies

- be able to explain the range of techniques available for identification of hazards associated with a system
- be able to apply at least two structured techniques for identification of hazards associated with a system which contains features which are novel to the practitioner
- be able to correctly apply functional failure analysis
- be able to participate as a team member in a HAZOP analysis
- be able to appropriately apply criteria for whether a suggestion should be included as a hazard of a system
- be able to differentiate between faults, hazards and accidents
- be able to critically assess data about hazard frequency and severity with respect to the source and reasonableness of the data
- be able to assess the risk associated with hazards
- be able to discuss the nature of common cause failures, and the impact that they have on hazard identification and risk assessment

## **Learning and Assessment**

35 hours of classroom learning, consisting of lectures, discussions, individual exercises and small group case studies

The module is assessed by individual open assessment consisting of two or three questions, each covering multiple learning objectives. Students are expected to provide up to 20 written pages to address the questions.

## **Evidence of Quality**

Assessment is overseen by an external examiner, who makes an informed judgement about the appropriateness of the assessment and whether the work of the students meets MSc standard in the subject area.

Quality of the module is overseen by the department Board of Studies, who are ultimately responsible to the Quality Assurance Agency for Higher Education.

The module is presented and assessment is marked by Research and Teaching Fellows from the University of York, all of whom have been selected based on teaching ability and competence in the field of system safety.

The module is not currently endorsed by any other professional body.

## **Currency of the Module**

The knowledge and skills in this module do not change significantly over time. We submit that practitioners who have passed this module at any time after 2007 should be considered to have demonstrated the associated competencies.

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(Example application for illustration of the scheme)

## Identification of the Module

### Module Name:

Introduction to System Safety (Continuing Professional Development)

### Nature of the Module:

This is a Continuing Professional Development module delivered in-house to industrial clients. The content is tailored to meet the needs of the client, typically by selecting case studies that match the client application domain, and spending more or less time on particular topics.

The learning objectives claimed below are common to all delivery of this module.

### Where the Module is Defined:

The module is equivalent to the formal module Foundations of Safety Engineering (FSE), with description on the module page:

<http://www.cs.york.ac.uk/postgraduate/modules/fse.html>

Precise definition is in the schedule and course notes for each delivery.

### Change Management:

The module is not formally change managed. Changes to the learning objectives or significant changes to the content or mode of delivery will be resubmitted to SaRS.

## Competencies

- be able to give definitions of safety-related terminology, and discuss the way the terminology is used in a variety of domains
- be able to draw or describe a typical safety lifecycle
- be able to identify the appropriate points in a project lifecycle when input from safety activities should be sought or contributed
- be able to discuss the roles of major groups of techniques within the safety lifecycle
- be able to recognise when the nature of a question or issue requires safety expertise beyond that held by the practitioner
- be able to differentiate between safety and compliance, and discuss the relationship between the two
- be able to differentiate between safety and reliability, and discuss the relationship between the two

## **Learning and Assessment**

35 hours of classroom learning, consisting of lectures, discussions, individual exercises and small group case studies

This module is assessed by a combination of multiple choice and short answer questions as an open-book examination at the end of each day. A longer open-book examination is given on the final day.

## **Evidence of Quality**

Assessment is peer reviewed by a 2<sup>nd</sup> person in the teaching team, who makes an informed judgement about the appropriateness of the assessment.

Quality of the module is not formally managed.

The module is not currently endorsed by any professional body.

Evidence of quality and match to the learning objectives is available in the form of folders of course notes, and references from experienced safety practitioners acting as client contacts.

## **Currency of the Module**

In the past, this module has not been assessed. Assessment began for BAE March 2010, and will be undertaken for all future deliveries. We request endorsement for the recent assessed deliveries and for future delivery in this format.