Human Factors and Safety Management Systems
Study Options at UniSA

Program Structure

Program Outcomes

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Credit and Recognition of Prior Learning

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Study Options at UniSA

UniSA offers three postgraduate study options in the area of Human Factors and Safety Management Systems. These are as follows:

- Graduate Certificate in Human Factors and Safety Management Systems
- Graduate Diploma in Human Factors and Safety Management Systems
- Master of Human Factors and Safety Management Systems

The Graduate Certificate involves four courses, and is the equivalent of half a year of full-time study. The Graduate Certificate is all coursework.

The Graduate Diploma involves eight courses, and is the equivalent of one year of full-time study. The Graduate Diploma is all coursework.

The Masters program involves 12 courses, and is the equivalent of an 18 month full-time study program. The Masters program includes a small research component, which can be undertaken as a workplace project.

It is anticipated that students will take the programs in approximately half-time mode. In short, we have designed the courses to suit students who are also working full-time.

Program Structure

The programs are structured around blocks of four courses, with each course being worth 4.5 units. The structure of courses within each program is as follows:

<table>
<thead>
<tr>
<th>Masters</th>
<th>Graduate Diploma</th>
<th>Graduate Certificate</th>
<th>Human Factors: Principles and Applications</th>
<th>4.5 Units</th>
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<tr>
<td></td>
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<td>Safety Management Systems</td>
<td>4.5 Units</td>
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<td>Managing Safety Change in Organisations</td>
<td>4.5 Units</td>
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</table>
**Program Outcomes**

The programs are designed to develop industry relevant knowledge and real skills in the area of Human Factors and Safety Management. UniSA has an outstanding reputation for applied research and industry relevance in its teaching.

At the end of the program you will have developed a wide range of competencies in innovative approaches to the management of safety. We aim for our graduates to be “highly marketable” as leading practitioners in their fields.

**Applications for the Programs**

Numbers on the UniSA programs will be limited to ensure that class size is optimal for coherent student interaction in the online learning environment and during the on-campus workshops. Applications open on 1st of October each year, with the possibility of a subsequent mid-year intake subject to space available on the program.

Applications are administered using the UniSA online application process called “Apply Online”. This facility can be accessed at:

http://www.unisa.edu.au/applyonline

All prospective applicants are urged to contact the Program Director with an informal “registration of interest” prior to applying for the program.

**Program Delivery**

The programs are delivered online, and do not require attendance at any on-campus lectures or tutorials. However, several of the core courses on the programs have a 2.5 day workshop which will be held on campus in Adelaide.

These workshops provide an excellent opportunity for interaction with other students as well as the guest presenters at the workshops.

Renowned industry-based practitioners and world-leading experts will present the workshops alongside key UniSA staff. Accordingly, these workshops are “highly recommended” parts of the program of study.

A schedule of course offerings and a workshop timetable can be found at the end of this document.
Online Learning Environment

The online learning environment at UniSA is called UniSAnet, and has been designed to facilitate all aspects of studying on these programs. The online learning environment for each of the courses will include:

- Guided Modules of Study
- Online Readings
- Short Activities and Case Studies
- Discussion and Chat facilities
- Assessment Management (upload and return of marked assignments)

In addition to the online learning environment, each course will be coordinated by a staff member at UniSA who will be available for consultation on the phone, via e-mail, or face-to-face if you are in Adelaide. A critical component of successful study will be regular interaction with your fellow students online, and with the course coordinator.

Time Commitment

Each course will involve a programmed series of study modules, along with either two or three assessment tasks. Each module will involve set readings and short activities, which can be taken in your own time and can fit around your own work commitments.

UniSA states that on average a course will involve a 10-hour commitment of time per week. However, this workload can be seen to fluctuate according to the proximity of assessment deadlines. We have designed the program of study in each course to be flexible with respect to your work demands. In short, we have designed the courses to suit students who are also working full-time.

Assessment

Each of the courses in the program will have either two or three assessment tasks. Assessment tasks have been designed to develop and refine industry-relevant skills in the management of safety and the analysis of Human Factors problems.

In order to maintain a high-quality program, strict policies on deadlines and academic standards will be maintained. A “flexible but fair” approach to assessment will apply.

Course Costs

In 2006, each course will cost $1500 for Australian students and $2000 for international students. Accordingly the total cost for the Graduate Certificate will be $6,000; the Graduate Diploma will be $12,000; and the Masters will be $18,000 in 2006.
Credit and Recognition of Prior Learning

Exemption or credit for prior studies or professional experience will not normally be given for any courses, unless completed within an equivalent postgraduate program at a recognised university. Any such requests will be assessed and granted at the discretion of the Program Director. Opportunities will be explored for the articulation of short-courses into the programs.

Electives

A wide variety of electives can be chosen as part of the program of study in order to take a course that meets the educational needs or areas of interest for students. A list of suggested electives are provided as an appendix to this document.

Entry Requirements

Graduate Certificate in Human Factors and Safety Management Systems
For entry into the Graduate Certificate in Human Factors and Safety Management Systems, applicants will normally have completed an undergraduate degree in a psychology, engineering, safety or management discipline. Alternatively, applicants who have at least four years of relevant professional experience will be determined to have the equivalent of an undergraduate degree.

Graduate Diploma in Human Factors and Safety Management Systems
For entry into the Graduate Diploma in Human Factors and Safety Management Systems, applicants will normally have completed an undergraduate degree in a psychology, engineering, safety or management discipline. Alternatively, applicants who have completed the Graduate Certificate in Human Factors and Safety Management Systems with a credit average will be eligible for entry into the Graduate Diploma in Human Factors and Safety Management Systems.

Master of Human Factors and Safety Management Systems
For entry into the Master of Human Factors and Safety Management Systems, applicants will normally have completed an undergraduate degree in a psychology, engineering, safety or management discipline area and have at least five year’s relevant professional experience. Alternatively, applicants who have completed the Graduate Diploma in Human Factors and Safety Management Systems with a credit average will be eligible for entry into the Master of Human Factors and Safety Management Systems.

International Students
In addition to the above requirements, international students must have obtained one of the following standards within the last twelve months prior to admission.

- IELTS score of 6.5 (with minimum sub-scores of 6.0 in reading and writing); or
- Equivalent English language proficiency; or
- Previous successful secondary or tertiary study where English was the language of instruction.
Further Details

Further details can be obtained from the Program Director, Dr Matthew Thomas:

Dr Matthew Thomas  
*Senior Research Fellow*  
Centre for Applied Behavioural Science - University of South Australia  
Level 5, Basil Hetzel Institute, TQEH  
Woodville Rd, Woodville SA 5011  
AUSTRALIA  
Mb: +61 8 438 808 808  
Ph: +61 8 8222 6624  
Fax: +61 8 8222 6623  
E-mail: matthew.thomas@unisa.edu.au  
### HUMAN FACTORS AND SAFETY MANAGEMENT SYSTEMS

#### TEACHING 2006 TIMETABLE

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<th>CODE</th>
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**Note One:** Courses all offered in external mode online

**Note Two:** Some courses, as noted, have a 2.5 day block teaching component.
## HUMAN FACTORS AND SAFETY MANAGEMENT SYSTEMS
### COURSE DELIVERY PLAN

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## HUMAN FACTORS AND SAFETY MANAGEMENT SYSTEMS
### SUGGESTED ELECTIVES

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These are indicative timings, based on the actual 2005 offerings and information as available July 2005. This information may be subject to change.

Students are able to select from a wide range of other possible electives from UniSA postgraduate courses. Please speak to the Program Director for further details.
New Course Statements

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Prerequisite(s)
Nil

Aim
An introduction to the field of human factors and an overview of human factors initiatives in a range of industry settings.

On completion of this course students should be able to:
- understand the scope of the human factors discipline
- understand the origins and development of human factors discipline
- understand the inter-disciplinary nature of human factors, with reference to international case-studies
- identify human factors issues in the workplace
- apply human factors principles to a range of problems
- design, implement and manage human factors interventions to solve safety-related problems.

By undertaking this course, students will progress in the development of the following qualities:

<table>
<thead>
<tr>
<th>Graduate Quality</th>
<th>Body of Knowledge</th>
<th>Lifelong learning</th>
<th>Effective problem solvers</th>
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Syllabus
Overview of the development of the field of human factors; contribution of key disciplines and the major theoretical underpinnings of human factors; application of human factors principles in a wide range of organisational settings.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying Book of Readings
Intensive workshop face-to-face directed study course.

Assessment
1 x 1000 word essay 30%
1 x 1000 word assignment 30%
1 x 2500 word project 40%

Textbook

References

Course coordinator
Matthew Thomas
**Long Title**  Safety Management Systems  
**Course ID**  100888  
**Short Title**  Safety Management Systems  
**Area & Cat No.**  BEHL  5051  

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**Prerequisite(s)**  
Nil  

**Aim**  
This course provides an introduction to the development and application of safety management systems within a range of organisational settings such as aviation, transport, mining and health-care.  

On completion of this course students should be able to:  
- understand the core elements of safety management systems  
- understand the regulatory frameworks relating to safety management systems  
- understand the range of safety management systems in applied settings  
- identify the role of safety management systems across a range of industries  
- apply key knowledge relating to the creating and evaluation of a safety management system  
- design, implement and manage a safety management system.  

By undertaking this course, students will progress in the development of the following qualities:  

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<th>Graduate Quality</th>
<th>Body of Knowledge</th>
<th>Lifelong learning</th>
<th>Effective problem solvers</th>
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**Syllabus**  
Safety management systems: the regulatory framework governing safety management systems; examples of safety management systems; functional aspects of safety management systems; the design and creation of safety management systems; ongoing safety management and monitoring.  

**Teaching and learning arrangements**  
This course will be delivered flexibly using the following means:  
Online: Online delivery of interactive course materials and accompanying Book of Readings  
Intensive Workshop face-to-face directed study course.  

**Assessment**  
1 x 1000 word literature review  30%  
1 x 1000 project design  30%  
1 x 2500 word project  40%  

**Textbook**  

**References**  

**Course coordinator**  
TBA
Prerequisite(s)
BEHL 5 5050 Human Factors: Principles and Applications

Aim
This course provides an overview of risk management and mitigation in complex organisational environments.

On completion of this course students should be able to:
- understand the foundation principles of risk management and mitigation
- understand the regulatory framework governing risk management in an international context
- evaluate a variety of existing risk assessment, management and mitigation frameworks
- identify all forms of potential risk in an applied setting
- apply risk assessment techniques within international contexts
- understand ethical issues and employ duty of care responsibilities
- implement a risk management and mitigation strategy.

By undertaking this course, students will progress in the development of the following qualities:

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<tr>
<th>Graduate Quality</th>
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Syllabus
Major concepts of risk management: risk and hazard identification, risk assessment, rectification and amelioration, evaluation methods; regulatory and legal requirements; international best-practice in systems-based approaches to risk management.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings
Intensive Workshop face-to-face directed study course.

Assessment
1 x 1000 word assignment 30%
1 x 1000 word risk analysis 30%
1 x 2500 word project 40%

Textbook

References

Course coordinator
Angela Baker
Prerequisite(s)
Nil

Aim
To examine a range of systems-based approaches to the management of safety change within organisations. To examine the drivers for organisational safety change and the barriers to implementation at a series of levels from the “shop floor” to senior management and board level.

On completion of this course students should be able to:
- understand the key drivers of organisational safety management
- understand the requisite elements of change management
- understand the competing interests in organisations and barriers to implementation of safety initiatives
- identify strategies for effective safety management in organisations
- demonstrate ethical action in safety management
- employ effective strategies for the management of safety in organisations of various sizes
- shape organisational safety management strategies to suit a wide range of organisational perspectives.

By undertaking this course, students will progress in the development of the following qualities:

<table>
<thead>
<tr>
<th>Graduate Quality</th>
<th>Body of Knowledge</th>
<th>Lifelong learning</th>
<th>Effective problem solvers</th>
<th>Work alone and in teams</th>
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</table>

Syllabus
Organisational safety management; change management within organisations; balancing competing interests – safety, economics and organisational resistance to change; strategies for safety-related change in the small, medium and large organisation; and advanced applications of safety management.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings
Intensive Workshop face-to-face directed study course.

Assessment
1 x 2000 word case-study analysis 40%
1 x 2500 word change management plan 60%

Textbook

References
Reason, J. 1997, Managing the Risks of Organizational Accidents, Ashgate, Aldershot, UK.

Course coordinator
Drew Dawson
Long Title: Safety Analysis and Research  
Course ID: 100891  
Short Title: Safety Analysis and Research  
Area & Cat No.: BEHL 5054

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Prerequisite(s)
Nil

Aim
To develop skills in the management of data-collection and analysis within organisations from the perspective of Human Factors and Safety Management. The course explores current best-practice in the use of multiple data-sources for the development of pro-active organisational approaches to safety and data-driven change.

On completion of this course students should be able to:
- understand the sources of safety-related data within an organisation
- understand the basic principles of research, data-analysis and interpretation and reporting
- identify strategies for effective data management within organisations
- measure the effects of safety-related interventions
- employ effective strategies for the collection, analysis and reporting of safety-related data
- design an overall strategy for data-collection within organisations of various sizes.

By undertaking this course, students will progress in the development of the following qualities:

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<tr>
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Syllabus
Sources of safety-related data; data-collection and management for human factors and safety management; basic principles of research, data analysis, interpretation and reporting; measuring the impact of safety interventions; strategies for effective data management within organisations; designing systems for safety-related data collection and reporting.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings

Assessment
1 x 1000 word assignment  20%  
1 x 1500 word assignment  30%  
1 x 2000 word project  50%

Textbook
Cozby, P. 2001, Methods in Behavioral Research, Mayfield Publishing, Mountain View, CA:

References

Course coordinator
TBA
**Long Title**  
Advanced Issues in Human Factors and Safety Management

**Course ID**  
100892

**Short Title**  
Advanced Human Factors

**Area & Cat No.**  
BEHL 5055

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**School**  
EIE

**Components**  
Online  
Mode: Directed Study  
Modality: External  
Final Exam? No

**Syllabus Plus**  
Yes

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**Prerequisite(s)**  
BEHL 5*** Human Factors: Principles and Applications

**Aim**  
To explore advanced human factors issues and applications. The course adopts a case-based learning model through which students will explore the application of advanced human factors principles in developing solutions to complex organisational problems.

On completion of this course students should be able to:
- understand the advanced theoretical and practical aspects of human factors in a range of cross-cultural settings
- understand advanced human factors considerations at system design, implementation and evaluation
- identify innovative human factors applications and solutions
- employ advanced techniques for human factors analysis and problem-solving
- utilise a range of skills as a human factors specialist.

By undertaking this course, students will progress in the development of the following qualities:

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**Syllabus**  
Advanced human factors principles and practice; advanced human factors case studies in system design; advanced human factors case studies in system implementation; advanced human factors case studies in system evaluation; advanced human factors case studies training.

**Teaching and learning arrangements**  
This course will be delivered flexibly using the following means:
- Online: Online delivery of interactive course materials and accompanying book of readings
- Intensive Workshop face-to-face directed study course

**Assessment**  
1 x 1500 word literature review  
30%  
1 x 1000 case study analysis  
30%  
1 x 2000 word project  
40%

**Textbook**  

**References**  

**Course coordinator**  
Drew Dawson
**Long Title**: Research Methods in Human Factors and Safety Management

**Course ID**: 100893

**Short Title**: Research Methods in HF and SMS

**Area & Cat No.**: BEHL 5056

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**Syllabus Plus**: No

**Prerequisite(s)**
BEHL 5050 Human Factors: Principles and Applications

**Aim**
To provide a detailed introduction to research methods in human factors and safety management systems.

On completion of this course students should be able to:

- understand the fundamental approaches to research
- understand a wide range of core concepts relating to effective research in practice
- understand basic forms of scientific measurement and statistical analysis
- plan an effective research project which employs scientific rigour
- implement a research plan
- utilise a range of data analysis techniques.

By undertaking this course, students will progress in the development of the following qualities:

<table>
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</table>

**Syllabus**
Introduction to a range of perspectives of research: experimental, quasi-experimental and observational approaches; quantitative and qualitative methods; introductory statistical procedures.

**Teaching and learning arrangements**
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings

**Assessment**
- 1 x 1000 word assignment 20%
- 1 x 1500 word assignment 30%
- 1 x 2500 research proposal 50%

**Textbook**

**References**

**Course coordinator**
Nicole Lamond
Prerequisite(s)
BEHL 5055 Advanced Human Factors

Aim
To give students the opportunity to explore in more detail a specific area of interest related to the previous course material; it is anticipated that students will use this opportunity to undertake preliminary theoretical investigations prior to embarking on their major practicum topic.

On completion of this course students should be able to:
- understand the advanced theoretical and practical aspects of a specialised topic relating to human factors and safety management systems
- employ advanced techniques for human factors analysis and problem-solving
- utilise a range of skills as a human factors specialist.

By undertaking this course, students will progress in the development of the following qualities:

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Syllabus
The study of a human factors or safety management system topic of interest for the individual student; literature review and problem identification; project designing and evaluating a range of possible intervention strategies.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of with regular contact with a Special Topic supervisor.

Assessment
1 x 1000 word literature review 40%
1 x 3500 word project 60%

Textbook
No set text.

Course coordinator
Matthew Thomas
Prerequisite(s)
BEHL  5056 Research Methods in Human Factors and Safety Management.

Aim
Students will undertake a practicum project totalling 18 units as the final component of the Masters program. This course is split across two 9 unit courses for those students wishing to complete the program part-time. It is envisaged that this thesis will provide the opportunity for an applied research project with in industry setting. It would be expected that students enrolled through industry partnerships will undertake a project within their own organisation.

On completion of this course students should be able to:
- undertake a supervised research practicum in the field of human factors and safety management systems
- employ advanced techniques for human factors analysis and problem-solving; and
- utilise a range of skills as a human factors specialist.

By undertaking this course, students will progress in the development of the following qualities:

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Syllabus
Identification of a human factors or safety management problem within an organisational setting; literature review; study design and implementation; analysis and reporting; project evaluation.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of with regular contact with a practicum supervisor.

Assessment
1 x 2000 word literature review 50%
1 x 2500 research protocol 50%

Textbook
No set text.

Course coordinator
Matthew Thomas
Prerequisite(s)
BEHL  5056 Research Methods in Human Factors and Safety Management

Aim
Students will undertake a practicum project totalling 18 units as the final component of the Masters program. This course is split across two 9 unit courses for those students wishing to complete the program part-time. It is envisaged that this thesis will provide the opportunity for an applied research project within in industry setting. It would be expected that students enrolled through industry partnerships will undertake a project within their own organisation.

On completion of this course students should be able to:
- undertake a supervised research practicum in the field of Human Factors and Safety Management Systems
- employ advanced techniques for Human Factors analysis and problem-solving
- utilise a range of skills as a Human Factors specialist.

By undertaking this course, students will progress in the development of the following qualities:

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Syllabus
Identification of a human factors or safety management problem within an organisational setting; literature review; study design and implementation; analysis and reporting; project evaluation.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of with regular contact with a practicum supervisor.

Assessment
1 x 5,000 word project report 100%

Textbook
No set text.

Course coordinator
Matthew Thomas
<table>
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<tr>
<th>Course ID</th>
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<td>Syllabus Plus</td>
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</table>

Prerequisite(s)
Nil

Aim
To provide an introduction to instructional design theory and practices, with a specific focus on the development of effective training systems in the organisational setting.

On completion of this course students should be able to:
- understand the fundamental principles and processes involved in instructional design
- understand the role of adult learning theory in the design of effective training
- understand the organisational requirements for responsive training systems
- undertake critical components of instructional design from needs analysis through to evaluation
- apply instructional design theory to the design, development and evaluation of training systems
- implement processes for the development of responsive training systems in an applied setting.

By undertaking this course, students will progress in the development of the following qualities:

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Syllabus
Fundamentals of instructional design/development of skills in the design, development, implementation, evaluation of training systems: instructional design theory and process; role of adult learning theory; needs analysis and cognitive task analysis; competency specifications; design, development and implementation; building responsive training systems.

Teaching and learning arrangements
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings.

Assessment
1 x 1000 word case-study 30%
1 x 1000 word assignment 30%
1 x 2500 word project 40%

Textbook

References

Course coordinator
Matthew Thomas
**Long Title**
Humans and Complex Socio-Technical Systems

**Course ID**
100898

**Short Title**
Humans and Complex Systems

**Area & Cat No.**
BEHL 5061

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**Prerequisite(s)**
BEHL 5050 Human Factors: Principles and Applications

**AIM**
This course provides high level analysis of the human factors issues associated with humans working within complex socio-technical systems.

On completion of this course students should be able to:

- understand the nature of complex socio-technical systems
- understand the role of human factors in managing complex socio-technical systems
- understand the dynamic interplay between human and machine
- identify critical components in existing socio-technical systems
- apply human factors and safety management theory in managing complex socio-technical systems
- implement safety management strategies in high-risk and complex settings.

By undertaking this course, students will progress in the development of the following qualities:

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**Syllabus**
Introduction to a wide range of theoretical perspectives; interface between humans and technology from a systems-based perspective; system design; human-computer interfaces; modelling and simulation; technological advances

**Teaching and learning arrangements**
This course will be delivered flexibly using the following means:
Online: Online delivery of interactive course materials and accompanying book of readings

**Assessment**
1 x 1000 word essay 30%
1 x 1000 word short-answer assignment 30%
1 x 2500 word project 40%

**Textbook**

**References**

**Course coordinator**
TBA