OCHS13019 *Prevention Through Design*
Term 2 - 2017

Profile information current as at 03/05/2024 10:47 pm

All details in this unit profile for OCHS13019 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

You will develop competence and confidence in using prevention through design (PtD) strategies and tools. PtD, or 'safe design', is a process of hazard identification and risk assessment to eliminate or minimize risk of injury and anticipate failure modes throughout the life of the product or system. You will be given the knowledge needed to optimise human performance and enhance safety in a socio-technical environment. Topics include safe design principles, optimisation of the design process, life cycle analysis, hazard and operability studies, Fault Tree Analysis , Failure Modes and Effect Analysis and strategic design risk assessment using the Safety Case. There is an emphasis on human factors engineering, the principles of technology adoption and consideration of the notion of disruptive technologies.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Pre-Requisite:- 72 credit points including successful completion of AINV11002 and either OCHS13008 or OCHS12019 Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2017

- Distance

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Portfolio**
Weighting: 50%
2. **Group Work**
Weighting: 20%
3. **Presentation and Written Assessment**
Weighting: 30%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Students

Feedback
Students requested assessment task information to be more easily located and for more explanation of the tasks.

Recommendation
Put assessment task explanations into one place in Moodle.

Feedback from Student

Feedback
Suggestion that groups be given the facility of Zoom sessions.

Recommendation
Schedule group sessions on request

Feedback from Lecturer

Feedback
Specific statements of what is expected in written assessment task descriptions are often not recognised as such by students

Recommendation
Emphasise the need to understand the requirements. Provide the assessment score sheet with the assessment description.

Feedback from Lecturer

Feedback
It is evident that many students are not aware of the expectation that the provided written, audio and slide materials need to be studied in order to understand assessment tasks and be able to respond to them in the context of the presented material.

Recommendation
Draw this expectation more explicitly to the attention of students.

Feedback from Student

Feedback
... this content is one of the key fundamentals of being an effective OHS professional ... In discussing this topic at work and reflecting on the course content it has become clear that understanding engineering design and maintenance is pivotal to being an effective safety practitioner.

Recommendation
None

Unit Learning Outcomes

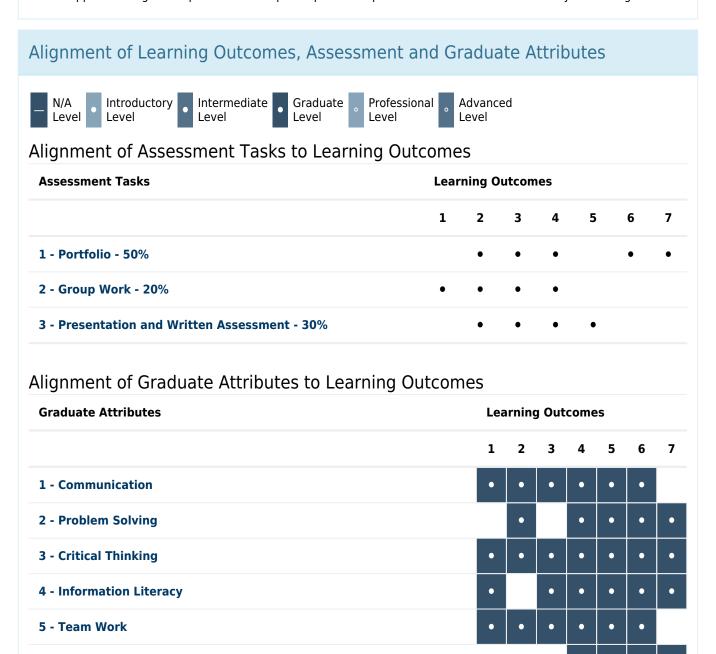**On successful completion of this unit, you will be able to:**

1. Appraise design as an effective strategy to minimise injuries, illnesses and fatalities.
2. Evaluate designs from a life cycle approach.
3. Identify past and present opportunities and challenges to achieving 'prevention through design' including the design process, human factors engineering, adoption of new technology and impact of disruptive technologies.
4. Evaluate potential risks associated with design issues in socio-technical systems around culture, processes, structures, equipment, tools and people by employing appropriate analytical methods.
5. Assess the value of the elimination of hazards through the redesign of buildings and structures, work environments, materials, plant (machinery and equipment) job tasks and work environments.
6. Create a systematic response to a design problem that incorporates the prevention through design principles and methods.
7. Appraise design sub-optimisation and plant operational parameters as a member of a safety case design team

Alignment of Learning Outcomes, Assessment and Graduate Attributes

—	N/A Level	∘	Introductory Level	∘	Intermediate Level	●	Graduate Level	∘	Professional Level	∘	Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Portfolio - 50%		●	●	●		●	●
2 - Group Work - 20%	●	●	●	●			
3 - Presentation and Written Assessment - 30%		●	●	●	●		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Communication	●	●	●	●	●	●	
2 - Problem Solving		●		●	●	●	●
3 - Critical Thinking	●	●	●	●	●	●	●
4 - Information Literacy	●		●	●	●	●	●
5 - Team Work	●	●	●	●	●	●	
6 - Information Technology Competence				●	●	●	●
7 - Cross Cultural Competence	●	●		●	●	●	
8 - Ethical practice	●			●	●	●	●

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
9 - Social Innovation							
10 - Aboriginal and Torres Strait Islander Cultures							

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Portfolio - 50%	•	•	•	•	•	•	•	•		
2 - Group Work - 20%	•	•	•	•	•	•	•	•		
3 - Presentation and Written Assessment - 30%	•	•	•	•		•		•		

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Peter Marshall Unit Coordinator
p.marshall@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Unit Learning Outcomes and assessment tasks explained. The background and scope of the course.		

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Design in the context of legislation and common law. Design in reality. Life cycle concepts. Managing public risk and occupational risk		

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Lessons from case studies. PtD in various industries - methods and approaches. The principles of assessment of the safety aspects of a design.		

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Further explanations of and resources for assessment tasks 1 and 2.		

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
The meaning of *prevention* in PTD. The goal of design - the meaning of *safety*.		

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
No lecture		

Week 6 - 21 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
PtD in accident theory and in risk control theory.		**Portfolio** Due: Week 6 Monday (21 Aug 2017) 9:00 am AEST

Week 7 - 28 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
PtD in practice in an organisation - how, when and by whom?		

Week 8 - 04 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Risk analysis.		

Week 9 - 11 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Analytical methods: HAZOP and Failure Mode and Effect Analysis		**Group Design Project** Due: Week 9 Monday (11 Sept 2017) 9:00 am AEST

Week 10 - 18 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
The practices of design, control systems and human interfaces, equipment renewal and maintenance practices		

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic

PtD in operational and critical risks.
'Safety cases'

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
		Learning Journal Due: Week 12 Tuesday (3 Oct 2017) 10:00 am AEST

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Portfolio

Assessment Type
Portfolio

Task Description
For any three of the cases provided to you in Moodle plus an additional two cases that you bring to this exercise, find out for each of your five cases:

- if design standards exist,
- what they are (document name(s))
- what organisation develops them,
- whether development is informed by both reactive and proactive methods (if you can discover the answer), and
- the means used in society to promulgate and encourage or enforce their use.

Assessment Due Date
Week 6 Monday (21 Aug 2017) 9:00 am AEST

Return Date to Students
Week 8 Friday (8 Sept 2017)

Weighting
50%

Assessment Criteria
For each case:

- Documentation of the research done, Harvard references etc. (1%)
- Explanation of the process of development of standards, promulgation and enforcement' (2%)
- Observations, analysis and commentary (7%)

In assessing the work, value will be placed on the quality and clarity of the written word, on logic, on the accurate use of technical terms and on the quality of analytical thought and comment.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Written assignment submitted in one document. Submission must be readable by Turnitin.

Learning Outcomes Assessed

- Evaluate designs from a life cycle approach.
- Identify past and present opportunities and challenges to achieving 'prevention through design' including the design process, human factors engineering, adoption of new technology and impact of disruptive technologies.
- Evaluate potential risks associated with design issues in socio-technical systems around culture, processes,

structures, equipment, tools and people by employing appropriate analytical methods.
- Create a systematic response to a design problem that incorporates the prevention through design principles and methods.
- Appraise design sub-optimisation and plant operational parameters as a member of a safety case design team

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Group Design Project

Assessment Type
Group Work

Task Description
Students will conduct an individual design appraisal and the learnings will then be applied to a group (team) design project. The project will mirror the research and decision activities that are necessary to successfully solve small and large problems in Prevention through Design. Individuals and teams will make presentations of their progress in order to give and receive critical evaluation.
PURPOSE
The purpose of this project is to gain experience and demonstrate your ability in appraising a design.
TEAMS
A team will consist of four or five students. Students will be allocated into teams.
CHOICE OF TOPIC
The team will select an existing design of something within the scope of this subject, namely buildings and structures, work environments, materials, plant (machinery and equipment), job tasks and work environments. The chosen topic should be one that at least one member of the team has access for detailed understanding. That team member and the team as a whole will have responsibility to ensure that this detailed understanding becomes a shared understanding across the team. If assistance with this is required, the team should request this of the lecturer.
The team should provide the lecturer with a written description of the topic for approval early in the Term. This description should say what it is, where it is, how access to it will be gained and how the team will develop a shared understanding of the topic.

Assessment Due Date
Week 9 Monday (11 Sept 2017) 9:00 am AEST

Return Date to Students
Week 11 Friday (29 Sept 2017)

Weighting
20%

Assessment Criteria
This is a team activity to complete a written assignment. Guidance will be given on the structure of this.
The design assessment must include:

- consideration of the whole life cycle of the object whose design is being evaluated;
- evidence of the use of a suitable structured analytical approach to the consideration of safety design requirements;
- comment on the effectiveness of the design strategies adopted;
- assess whether this design could be improved by application of a safety case; and
- make any appropriate observations about social, organisational or cultural assumptions on which you believe the design effectiveness depends.

In assessing the work, value will be placed on the quality and clarity of the written word, on logic, on the accurate use of technical terms and on the quality of analytical thought and comment.
One grade will be awarded for the team report and each team member will receive the same grade unless the team propose a different allocation (for example, if participation amongst team members is very unequal). The lecturer will have the final say in mark allocations.

Referencing Style

- [Harvard (author-date)](#)

Submission
Online Group

Submission Instructions
Written assignment submitted in one document. Submission must be readable by Turnitin.

Learning Outcomes Assessed

- Appraise design as an effective strategy to minimise injuries, illnesses and fatalities.
- Evaluate designs from a life cycle approach.
- Identify past and present opportunities and challenges to achieving 'prevention through design' including the design process, human factors engineering, adoption of new technology and impact of disruptive technologies.
- Evaluate potential risks associated with design issues in socio-technical systems around culture, processes, structures, equipment, tools and people by employing appropriate analytical methods.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

3 Learning Journal

Assessment Type
Presentation and Written Assessment

Task Description
The purpose of this project is to provide you with an opportunity to assimilate and reflect on the subject matter of this unit and your experiences in contributing to the group and other work. This will be achieved by maintaining a personal journal during the term. It is an opportunity for you to personally consider the meaning and practice of each of the learning outcomes that you will find in the Unit Outline.
The second purpose is to provide an opportunity for your experience and understanding to be assessed against the learning outcomes of the unit.
The various experiences of the term include:

- Presentations on the history of the emphasis on PtD, the support for it in legislation, Standards and Codes of Practice and consideration of the range of design areas seen as requiring attention.
- Your participation in group work on a case - the work you contributed to the effort of the group.
- Your own work on small cases
- Investigation done by you into sources of information on the web
- Your readings from Moodle and other sources.

For this assessment item, you are asked to complete an electronic journal record of your:

- work in support of the two other assessment tasks - records of your research and analysis
- understanding of the points made in lectures and of the research presented
- efforts with respect to the various web search tasks suggested in weeks 1 to 3 inclusive
- personal responses to the various concepts and tasks to which you have been exposed,as they occurred - eg. uncertainty, understanding, ability to see or not see the purpose or intent and so on.

Make journal notes in support of your work and reflections (thoughts and feelings) <u>as they arise</u>. Ensure that, towards the end of the term, you draw these points and reflections together and include comments on all the aspects of the unit listed above.

Assessment Due Date
Week 12 Tuesday (3 Oct 2017) 10:00 am AEST

Return Date to Students
Exam Week Friday (20 Oct 2017)

Weighting
30%

Assessment Criteria
The depth and breadth of your response will be considered in the evaluation of your understanding of the PTD unit and the broader topic of PTD.

- Journal your work in support of the two other assessment tasks - records of your research and analysis;
- Journal your understanding of the points made in lectures and of the research presented Journal your efforts with respect to the various web search tasks suggested in weeks 1 to 3 inclusive;
- Journal your personal responses to the various concepts and tasks to which you have been exposed, as they occurred - eg. uncertainty, understanding, ability to see or not see the purpose or intent ....and so on;
- Journal your thoughts as you draw these points and reflections together;
- Scholarly style;
- 3000 words; and
- Harvard Referencing.

In assessing the work, value will be placed on the quality and clarity of the written word, on logic, on the accurate use of technical terms and on the quality of analytical thought and comment.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Written assignment submitted in one document. Submission must be readable by Turnitin.

Learning Outcomes Assessed

- Evaluate designs from a life cycle approach.
- Identify past and present opportunities and challenges to achieving 'prevention through design' including the design process, human factors engineering, adoption of new technology and impact of disruptive technologies.
- Evaluate potential risks associated with design issues in socio-technical systems around culture, processes, structures, equipment, tools and people by employing appropriate analytical methods.
- Assess the value of the elimination of hazards through the redesign of buildings and structures, work environments, materials, plant (machinery and equipment) job tasks and work environments.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Ethical practice

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem