OCHS12019 *Human Factors*
Term 1 - 2017

Profile information current as at 14/12/2025 03:36 pm

General Information

Overview
This unit provides an understanding of human factors and how a knowledge of human strengths and limitations, both mental and physical, can lead to better safety outcomes in the real world. It will be concerned with end user design issues and human variability in work environments. Students will be exposed to foundational human factors principles and knowledge and learn human factors methods for the identification and assessment of human factors issues, as well as develop skills to make human factors design recommendations to enhance human performance in the real wold.

Details
Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Pre-requisite study of 24 credit points.
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 1 - 2017

- Adelaide
- Brisbane
- Bundaberg
- Distance
- Gladstone
- Melbourne
- Rockhampton

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: 25%
2. **Written Assessment**
Weighting: 25%
3. **Group Work**
Weighting: 50%

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 Student survey

Feedback
Teamwork at distance is a concern for students. However, after completing this course, students noted that they felt confident to be able to lead a team and to effectively resolve team issues.

Recommendation
Teamwork is an important and authentic activity in the Human Factors domain. Therefore, continued support for students is necessary to help them build leadership and personal teamwork skills.

Action
Teamwork was retained in the unit and supported with a lecture.

Feedback from Course evaluation

Feedback
Students appreciated the provision of constructive feedback.

Recommendation
Continue this practice.

Action
Constructive feedback was provided as before.

Feedback from Course evaluation

Feedback
Students found the Moodle site layout easy to navigate.

Recommendation
Continue to use this format.

Action
The layout of the Moodle site was maintained as before.

Unit Learning Outcomes

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

1. Use knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts.
2. Apply human factors knowledge to the evaluation of work systems and equipment design including work capacity and limitation.
3. Discuss and demonstrate the use of human factors assessment tools to enable the development of problem identification skills on human factors issues within the workplace.
4. Develop team work and project management skills through the application of human factors assessment and solutions to design issues with the workplace.

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
1 - Portfolio - 25%	•		•	
2 - Written Assessment - 25%	•	•	•	
3 - Group Work - 50%		•		•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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				•
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 - 25%	•	•	•	•		•				
2 - Written Assessment - 25%	•	•	•	•						
3 - Group Work - 50%	•	•	•	•	•	•	•	•		

Textbooks and Resources

Textbooks

OCHS12019

Prescribed

An introduction to human factors engineering
Edition: 2nd (International) (2013)
Authors: Christopher D. Wickens; John D. Lee; Yili Liu; Sallie E. Gordon Becker
Pearson Education, Inc
Harlow , United Kingdom
ISBN: 1292022310
Binding: Paperback

View textbooks at the CQUniversity Bookshop

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

Elise Crawford Unit Coordinator
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Schedule

Week 1 - 06 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
The discipline of human factors	1	

Week 2 - 13 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Physical ergonomics	10, 11, 12	

Week 3 - 20 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Cognitive ergonomics	6, 7, 8, 9	

Week 4 - 27 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Task Analysis	3	Team contracts are due: 07/08/16 11:45PM AEST

Week 5 - 03 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Environmental ergonomics	4, 5, 13	

Vacation Week - 10 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Vacation Break		

Week 6 - 17 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Organisational ergonomics	14, 15, 18	**MSD Risk Poster** Due: Week 6 Wednesday (19 Apr 2017) 11:45 pm AEST

Week 7 - 24 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Teamwork	19	

Week 8 - 01 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Safe design	3	**Research Articles** Due: Week 8 Friday (5 May 2017) 11:45 pm AEST

Week 9 - 08 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Tools, principles and practice		

Week 10 - 15 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Tools, principles and practice		

Week 11 - 22 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Completion of project work		

Week 12 - 29 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Completion of project work		**Concept Proposal & Journal** Due: Week 12 Friday (2 June 2017) 11:45 pm AEST

Review/Exam Week - 05 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 12 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 MSD Risk Poster

Assessment Type
Portfolio

Task Description
An important step in the overall human factors process is to identify work tasks which might result in Musculoskeletal Disorder (MSD) risks. This assignment is about developing your understanding of the principles of assessment for these types of activities using human factors analytical tools. You need to identify a manual handling task that involves lifting, in either a workplace or other setting. You are required to conduct a hierarchical task analysis and then to assess the task being carried out using two different assessment tools. You must use the Revised NIOSH Lifting Equation and another suitable tool. You are then to present your findings, provide recommendations for work task improvements or redesign, in a poster format. The scientific poster is to be suitable for display at a conference or workplace to inform readers of the physical ergonomic task you have assessed.

(1) Your poster needs to contain the following:

- Describes the context of the workplace or other setting i.e. where does this task take place?
- Identifies the type of workers or people who might be affected
- Describes the actual task being performed (choose one task only)
- Identifies the level of MSD risk
- Discusses the potential consequences as a physical injury this might have
- Recommend task improvements which might be made to reduce the MSD risk.
- Reference list: contains scholarly articles in Harvard Referencing Style

(2) Your Poster needs to achieve the following:

- Is informative: The poster provides a summary of analysis undertaken, highlights the significance of the problem and offers recommendations.
- Is easy to grasp: Utilises human factors design principles to enhance swift comprehension of the message portrayed (e.g. colour, placement, imagery, etc.)

Further details will be on Moodle.

Assessment Due Date
Week 6 Wednesday (19 Apr 2017) 11:45 pm AEST

Return Date to Students
Week 8 Wednesday (3 May 2017)

Weighting
25%

Assessment Criteria
The poster will be assessed against the following criteria:

- Identifies context of workplace and/or other setting and people involved (10%)
- Describes the actual task being assessed (10%)
- Describes the MSD risk or issues and potential effects (15%)
- Assesses the MSD risk score using two human factors analytical tools (20%)
- Recommends changes to the task, based on assessment findings, for MSD improvements to the workplace or other setting (15%)
- Presentation, visuals, poster layout (20%)
- Referencing, grammar (10%)

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Suitable poster formats include: ppt, pptx, pdf.

Learning Outcomes Assessed

- Use knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts.
- Discuss and demonstrate the use of human factors assessment tools to enable the development of problem identification skills on human factors issues within the workplace.

Graduate Attributes

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

2 Research Articles

Assessment Type
Written Assessment

Task Description
This task requires four (4) posts: one (1) original article post, and three (3) meaningful reply posts.
Original post (start a new discussion topic. To identify you, in the subject area type: Your name and article citation (e.g. Elise Crawford - Smith (2017))
In Moodle, post a contribution about a research journal article you have found which relates to **one of the four** discussion groups which are headed:

- The Discipline of Human Factors and Ergonomics;
- Physical Ergonomics;
- Cognitive Ergonomics;
- Organisational Ergonomics.

Your post should briefly inform the other students about the journal article, in the following ways:

1. The aim of the study/ article
2. The research method used
3. What the research was about
4. What the findings were
5. Include the reference to the article in Harvard Referencing style
6. Attach the journal article

You should keep your post to less than 150 words and you should not cite a journal article which someone else has already done. This exercise is intended to give all students a brief overview of some of the research being conducted in the Human Factors/Ergonomics area and serve as a good starting point for the other assessments you will do. An example of this type of post will be given in Moodle.
Reply posts (reply to original posts from different students. To identify you, in the subject area type: Your name and the other student's name (e.g. Elise Crawford - reply to Jim Jones)
You are also required to post three (3) general discussion replies to other students (in the other discussion forums) from which you have not done your journal article post. The end result is that you will have made a contribution to each of the four discussion group areas as listed above. The contributions MUST pertain to the subject matter and ADD to the discussion of the human factors and ergonomics content of this unit. A meaningful contribution is one that extends the discussion. It may include: a discussion on the methodology used, a personal example, and/or a contribution from another author (different research article) that adds to the research under discussion. It is expected that you would have read the article in order to add to the discussion.

Assessment Due Date
Week 8 Friday (5 May 2017) 11:45 pm AEST

Return Date to Students
Week 10 Friday (19 May 2017)

Weighting
25%

Assessment Criteria
The key assessment criteria used will be that you have posted one summary of a journal article and also engaged in research knowledge by posting three replies to other students (4 posts in all, across four areas of study). You will also be assessed on your 'genuine participation' and demonstration of your knowledge and/or understanding to the research subject matters covered within the Moodle learning environment.
1 Original post (40%)
3 Reply posts (60%)

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Post in the appropriate Discussion Forum according to: Discipline, Cognitive, Physical or Organisational Ergonomics

Learning Outcomes Assessed

- Use knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts.
- Apply human factors knowledge to the evaluation of work systems and equipment design including work capacity and limitation.
- Discuss and demonstrate the use of human factors assessment tools to enable the development of problem

identification skills on human factors issues within the workplace.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

3 Concept Proposal & Journal

Assessment Type
Group Work

Task Description
Please refer to the PROJECT DETAILS document in Moodle. This documentation will provide further details about the project and guidance to help the team operate effectively. Each team has three submissions, namely:

- A Team Project Plan or Contract
- A Team Redesign Concept Proposal
- An Individual Reflective Journal and Essay (submitted separately)

(a) Team project plan or contract (non graded)
Working in teams and learning from colleagues are very powerful ways to learn. For the team to work well, you will need to manage the team activities. The purpose of the Team Project Plan or Contract is to get agreement from the team about how the team plans to operate. These team rules (**processes**) should be largely decided before the team decides what needs to be done (**product**).
The Project Plan or Contract should contain:

- The names of all team members and preferred contact details (and any applicable constraints)
- A tentative schedule that shows initial activities to be done and who will do each activity (not this will change as the project progresses, but it is important to start with a plan)
- A strategy for resolving team related issues

(b) Redesign Concept Proposal (60%)
The Redesign Project is a collaborative, team-based design exercise based on Human Factors principles. Your job, as a team, is to find something that you can red-design to make it work better for humans based on what you learnt about Human Factors principles. It can be a simple issue, like no handles on an item that is difficult to carry, or a problem experienced when using a self-service payment kiosk. You are free to come up with an idea or product and a few suggestions will also be provided on Moodle. The team is to prepare and submit one Redesign Concept Proposal.
The Redesign Concept Proposal should include:

- Title page
- Executive Summary - one page summary of the whole proposal
- The Problem definition - the product that you chose, statement of the problem to solve, and associated success criteria
- Analysis of the problem - using human factors analytical tools where appropriate to assess the item, the end user requirements and functionality required, as well as any technical specifications and mindfulness of the lifecycle of the product (e.g. Environmental implications)
- A discussion on the significance of the problem and plausible concept solutions
- Concept chosen - design specifications, materials, costing, user instruction (if applicable), sketches/photos/diagrams
- Justification for design decisions made - should improve functionality and end user satisfaction.
- Evidence of drawing on current and appropriate literature or models to justify human factors design decisions
- References - CQU Harvard referencing style
- Appendices - all analyses

(c) Reflective Journal (40%)
Two things are required:

1. Each student should submit their own reflective journal. The journal should show your learning journey throughout the term in regards to the discipline of human factors and how this might relate to your project.
2. Each student should write a short essay (500 words): Describe your thoughts about the strengths and challenges associated with teamwork and offer ideas about how to improve the way teams function. This should be your final journal entry.

This project has four main objectives:

1. To develop teamwork skills that will build confidence and make you a more effective team member in projects in which you will be involved,
2. To develop a redesign of a product that will meet the problem definition that is sound from a technical human factors perspective,
3. To provide an opportunity to develop practical skills in using human factors analytical tools, and
4. To develop reflective learning.

Assessment Due Date
Week 12 Friday (2 June 2017) 11:45 pm AEST

Return Date to Students
Review/Exam Week Friday (9 June 2017)

Weighting
50%

Assessment Criteria
The redesign project proposal will be assessed according to how well the proposal meets the following criteria (60%):

- Integrates principles of anthropometric variation of the human body
- Integrates principles of work capacity and limitations
- Integrates principles of perception and information processing
- Analyses the intended environment of use
- Analyses the potential task associated with the system
- Develops a redesign that meets the problem definition
- Develops a redesign, sound from a human factors perspective and appropriate from a technical perspective
- Format is consistent with a professional design proposal (i.e. structure, written expression, referencing)

The reflective journal will be assess according to how well it meets the following criteria (40%):

- Consideration of how the physical, cognitive, organisational and environmental ergonomics can influence end user interactions with (i.e. use of) products, systems, and processes.
- Consideration of how tools, methods and principles of human factors contribute to improved use, function and satisfaction.
- Consideration of lessons learnt, the strengths and challenges experienced during this teamwork activity and ways to improve team functioning in the future.

A team grade will be assigned to the Redesign Concept Proposal and **an individual grade** to the Journal (including the essay). Additionally, where applicable, the Journal will be used to moderate the individual allocation of the marks for the proposal, up or down one letter grade depending on the individual's demonstrated understanding of the proposal submitted.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Apply human factors knowledge to the evaluation of work systems and equipment design including work capacity and limitation.
- Develop team work and project management skills through the application of human factors assessment and solutions to design issues with the workplace.

Graduate Attributes

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