OCHS12019 *Human Factors*
Term 2 - 2019

Profile information current as at 14/12/2025 12:40 pm

General Information

Overview
This unit introduces you to the discipline of human factors and how a knowledge of human strengths and limitations, both cognitive and physical, can lead to better safety outcomes. This unit addresses end-user design issues and human variability in occupational contexts. You will explore human factors principles and learn to assess human interaction concerns using a variety of human factors methods. You will also develop skills to make human factors design recommendations to enhance human performance.

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 2 - 2019

- Adelaide
- Brisbane
- Bundaberg
- Gladstone
- Mackay
- Melbourne
- Online
- Perth
- Rockhampton
- Sydney

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 Have Your Say survey

Feedback

The pre-lecture videos are an excellent preview to the weeks learning, they make learning and revision easy.

Recommendation

Continue to provide students with the weekly pre-recorded lecture series.

Feedback from Have Your Say survey

Feedback

The group assessment was challenging and a practical way of learning.

Recommendation

Students will continue to be supported throughout the teamwork assignment, as group work at distance can be challenging.

Unit Learning Outcomes

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

1. Apply knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts
2. Analyse work systems and equipment design in accordance with user needs, capabilities and limitations
3. Demonstrate the use of human factors assessment tools for addressing human interaction problems within various occupational contexts
4. Develop teamwork and project management skills through the application of human factors assessment and problem solving.

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

Introduction to human factors: applying psychology to design
Edition: 1st (2018)
Authors: Stone, NJ, Chaparro, A, Keebler, JR, Chaparro, BS & McConnell, DS
CRC Press, Boca Raton, FL.
Boca Raton , Florida , United States
ISBN: 13: 978-1-4987-8380-4
Binding: eBook

Additional Textbook Information

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
e.crawford@cqu.edu.au

Schedule

Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Introduction to Human Factors	Chapter 1: Introduction to Human Factors	Assessment activity: Complete the *Belbin Team Role Test* located in Moodle and start forming teams of four (for Assessment Item 3).

Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Human Factors Research	Chapter 2: Research methods	Assessment activity: Start looking for usability problems in preparation for Assessment Item 3.

Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic

Live Lecture: Physical Ergonomics I	Work Physiology (Wickens et al. 2014)	**Human Factors Research** Due: Week 3 Friday (2 Aug 2019) 11:59 pm AEST

Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Physical Ergonomics II	Chapter 9: Anthropometry and Biomechanics	Assessment activity: Anyone not in a team by close of business Friday will be placed in a team.

Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Cognitive Ergonomics I	Chapter 3: Vision (Section 3.4) Chapter 6: Attention, Memory, and Multitasking	**MSD Risk Poster** Due: Week 5 Friday (16 Aug 2019) 11:59 pm AEST

Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Human factors in Design	Chapter 5: Methods of Evaluation	Assessment activity: As a team, decide on the human-machine interaction problem (Ass. Item 3) **Team Contract** Due: Week 6 Friday (30 Aug. 2019) 11:59 pm AEST

Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Cognitive Ergonomics II	Chapter 8: Controls (Section 8.5)	Assessment activity: Conduct preliminary analysis to understand the user's usability issues, needs, capabilities and limitations (Ass. Item 3).

Week 8 - 09 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Environmental Ergonomics	Chapter 10 Environmental Design	Assessment activity: Complete secondary analysis and define the problem (Ass. Item 3).

Week 9 - 16 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Organisational Ergonomics I	Chapter 11: Human Error	Assessment activity: Identify and evaluate redesign options. Select the best solution (Ass. Item 3).

Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Live Lecture: Organisational Ergonomics II	Chapter 11: Section 11.7 Reducing Errors	Assessment activity: Finalise the project and prepare the concept proposal (Ass. Item 3)

Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic

Live Lecture: Human Factors and Safety	Chapter 15 (Bridger 2018)	**Team Design Project** Due: Week 11 Friday (4 Oct 2019) 11:59 pm AEST
Week 12 - 07 Oct 2019		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Live Lecture: Future Trends	Chapter 12: Future Trends in Human Factors	**Individual Reflections** Due: Week 12 Friday (11 Oct. 2019) 11:59 pm AEST
Review/Exam Week - 14 Oct 2019		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Exam Week - 21 Oct 2019		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Assessment Tasks

1 Human Factors Research

Assessment Type
Portfolio

Task Description
Purpose
As with all professionals, evidence-based practice is extremely important to the integrity of the profession. Therefore, knowing where to find evidence to support practice is valuable for improving human factors concerns that impact health and safety.
Instructions
This assessment item provides you with an opportunity to refine your research skills and to give you, as a collective cohort, a brief overview of the research being conducted in the field of Human Factors (aka Ergonomics). Human Factors researchers are interested in optimising human 'interactions' with others, products, services, and systems. The information you find will give you some insight into the practice of Ergonomics as well as associated human capabilities and limitations. Your task is to do the following:

- In 150 words post a review of one (1) research article from a peer reviewed journal that no other student has reviewed. Include a complete reference to the article.
- In 150 words reply to at least three (3) of your colleagues to extend the discussion by relating information from another resource. Include a complete reference to the resource shared.
- Submit at least one post in each of the four domain forums (a total of 4 posts will be assessed, one review and three replies).

The four domain forums are located in Moodle and are as follows:

- Physical Ergonomics
- Cognitive Ergonomics
- Organisational Ergonomics
- Environmental Ergonomics

Review post instructions: when you are ready to post your review, start a new topic in the relevant forum and provide the citation of the article in the topic header: e.g. (Smith 2019). This will make it easier for other students to know which articles have been reviewed. Your post should include:

- The research article review (study aim, methods, results and conclusions)
- A complete reference and publication number
- The attached article (pdf).

Reply post instructions: the reply posts should meaningfully extend the topic by relating information from another source. Include a complete reference of the source shared.
NOTE: all reviewed articles must be a published peer-reviewed journal article. Therefore, do not review chapters, books, white papers, conference papers, workbooks, handbooks, and the like. However, these items are acceptable in a reply post where appropriate.

Assessment Due Date
Week 3 Friday (2 Aug 2019) 11:59 pm AEST

Return Date to Students
Week 5 Friday (16 Aug 2019)

Weighting
25%

Assessment Criteria
The review post (10 marks)

- Journal article is published and attached (1 mark)
- The aim of the study is clearly expressed (1 mark)
- The research method employed is outlined (2 marks)
- The research findings are presented (2 marks)
- Conclusions are drawn (1 mark)
- Written expression, referencing, word count (3 marks)

The reply posts (5 marks each, total of 15 marks)

- Article and discussion adds meaningfully (4 marks)
- Full reference included (1 mark)

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Complete and submit the Research Portfolio Form in the assessment submission area on Moodle.

Learning Outcomes Assessed

- Develop teamwork and project management skills through the application of human factors assessment and problem solving.

Graduate Attributes

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

2 MSD Risk Poster

Assessment Type
Written Assessment

Task Description
An important skill of safety science professionals is to identify work tasks that present Musculoskeletal Disorder (MSD) risks. This assignment is about developing your understanding of the principles of assessment for physical human-task interactions while at work. You are required to identify a manual handling task that involves a two-handed lift that involves no stepping. You are required to conduct a *hierarchical task analysis* and then to assess the task being carried out using two physical human factors analytical tools, the *Revised NIOSH Lifting Equation* and the *Rapid Entire Body Assessment*. From the findings of your study you are to offer redesign recommendations to reduce the MSD risk identified. Your work is to be presented in poster abstract format. The poster is to be suitable for display at a conference to inform delegates of the physical task you have assessed. Your poster should contain the following:

- The context of the workplace or other setting
- Details about the person who is at risk
- A description of the task being performed
- The risk factors found from the analysis
- Evidence of analysis competence

- A discussion about the significance of the risk
- Task redesign recommendations
- A reference list containing scholarly articles

Assessment Due Date
Week 5 Friday (16 Aug 2019) 11:59 pm AEST

Return Date to Students
Week 6 Friday (30 Aug 2019)

Weighting
25%

Assessment Criteria
Poster content (25 marks)

- Contextual detail of workplace or other setting and the worker involved (5 marks)
- Demonstrates competence when assessing physical tasks (5 marks)
- Risk factors are identified and the significance of their risk discussed (5 marks)
- English expression, spelling, grammar, and references (5 marks)
- Visual design principles utilised (5 marks)

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submit in ppt, pptx, or pdf formats only.

Learning Outcomes Assessed

- Apply knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts
- Analyse work systems and equipment design in accordance with user needs, capabilities and limitations
- Demonstrate the use of human factors assessment tools for addressing human interaction problems within various occupational contexts

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Social Innovation

3 Team Design Project

Assessment Type
Group Work

Task Description
This project has three main objectives:

- to develop leadership and project management skills relevant to design projects
- to develop design thinking and the user-centred design process
- to develop reflective practice

You are required to submit the following tasks:

- Team contract (10 marks)
- Team concept proposal (30 marks)
- Individual Reflections (10 marks)

1. Team Contract
As a team, you are to develop a team contract to establish lines of communication and rules of process. A template will be provided on Moodle, for you to use, as well as instructions for forming teams. In 1000 to 1500 works, the contract

should contain the following:

- Team profile
- Communication plan
- Schedule of milestones
- Issues resolution plan

2. Team Concept Proposal
As a team, your task is to find a human-machine interaction problem. You are to take a user-centred approach to assess and resolve the problems found. To assess the problem you will use various human factors analytical tools. Based on findings and knowledge of human needs, capabilities and limitations, your team is to propose redesign changes to improve usability. In 3000 words, the proposal should include:

- Title page
- Executive summary
- Table of contents
- Introduction
- User population
- Methods used
- Results and discussion
- Problem definition
- An evaluation of redesign options
- Justification and details of chosen concept
- References
- Appendices.

The proposal should be presented in CQUni Harvard Style:

- Single document
- 1.5 line spacing
- Total file size cannot exceed 10 MB

It is up to the individual team members to negotiate how the final proposal will be written. As an iterative process is needed to complete this assignment successfully, avoid the divide and concur approach. It is also highly recommended to have one-person curate the final proposal document. Unless there are exceptional circumstances, all team members will receive the same grade for team submissions.
3. Individual Review
By the due date, you are to reflect on your teamwork performance. Then in about 200 words identify what you will do in the future to improve teamwork productivity.
Finally, in Week 11 you will receive a link to the Self & Peer Assessment survey via your student email account. You are to rate yourself and your fellow team members using the set criteria. To be fairly graded by fellow team members, you will need to ensure that your team members know what you have done during the development of the team contract and concept proposal. If the work performance of your peers is poor, or communication skills are poor, the peer review mark you assign should reflect this. This survey must be completed prior to the due date when it will close. The Unit Coordinator will allocate a grade based on the Self & Peer Assessment ratings and what you have written for your teamwork reflection. If you believe that the peer assessment is unfair, you can make a case to the Unit Coordinator who will moderate the grade on a case-by-case basis.

Assessment Due Date
Week 11 Friday (4 Oct 2019) 11:59 pm AEST

Return Date to Students
Review/Exam Week Friday (18 Oct 2019)

Weighting
50%

Assessment Criteria
Team Contract (10 marks)

- Team profile (2 marks)
- Communications plan (2 marks)
- Schedule of milestones (3 marks)
- Issues resolution plan (3 marks)

Team Concept Proposal (30 marks)

- Integrates principles of human needs, capabilities and limitations (5 marks)

- Analyses the interaction problem including the environment of use (5 marks)
- Develops a suitable problem definition statement and success criteria (5 marks)
- Systematically evaluates potential concept solutions (5 marks)
- Develops a design concept that meets the problem definition from a human perspective (5 marks)
- Format is consistent with a professional proposal (5 marks)

Individual Review (10 marks)

- Comments demonstrate reflective learning on teamwork (5 marks)
- Self and peer assessment (5 marks)

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
The Team Contract and Team Proposal are submitted as a team. The Individual Review is to be submitted by each team member.

Learning Outcomes Assessed

- Apply knowledge of the discipline of human factors including physical, cognitive and organisational ergonomics in a variety of contexts
- Analyse work systems and equipment design in accordance with user needs, capabilities and limitations
- Demonstrate the use of human factors assessment tools for addressing human interaction problems within various occupational contexts
- Develop teamwork and project management skills through the application of human factors assessment and problem solving.

Graduate Attributes

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

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