



PSYO8922

Human Factors in New Technology

Session 1, In person-scheduled-weekday, North Ryde 2022

School of Psychological Sciences

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General Information

Unit convenor and teaching staff

Unit Convener

Mark Wiggins

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Contact via Email

16 University Avenue, Room 2.367

By Appointment

Credit points

10

Prerequisites

Admission to MOrgPsych

Corequisites

Co-badged status

Unit description

This unit examines the relationship between human performance and advanced technology, and the role of organisational psychologists in optimising this relationship. This unit will provide students with knowledge of theories and practical perspectives relating to the application of human factors principles in a range of operational settings. Practical components of the unit focus on the conduct of hazard analyses, task analyses, risk assessments, usability analyses, and human factors tests.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

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

ULO1: Demonstrate knowledge by critically analysing models and theories that purport to explain human performance and technology.

ULO2: Apply and differentiate the strategies associated with proactive and reactive human performance assessment, including practical issues and challenges.

ULO3: Diagnose human factors-related issues in the context of an applied industrial environment

ULO4: Propose solutions to improve the relationship between human performance and technology.

General Assessment Information

User Experience Report

This assessment task involves a report in which you examine a website of your choice and provide recommendations to address any user experience or usability issues identified.

Your submission should be formulated as an industry report, and must include:

1. A description of the website (include a wireframe), a summary of the significance of the website for the organisation, and an outline of the intended goals of the report;
2. A description of the investigative approach(es) and a justification of the tools selected to identify both positive and negative features of the website;
3. A summary of the outcomes of the investigation (e.g. audit outcomes, user perceptions/expectations, frequency of errors, path summary)
4. Specific recommendations to improve user experience and the usability of the website.

Quiz Questions

Completion of the multiple choice questions associated with each video recording is a unit requirement. While it does not carry any weight towards the final mark, the failure to complete the questions successfully may result in failure of the unit.

Examination

This task involves an examination of the work that you have covered throughout the semester. The examination is conducted online and is 90 minutes in duration. The responses are short-answer, and questions will be drawn directly from the learning objectives that accompany each class.

Late Submissions and Penalties

Late submissions, without an approved extension, will receive a 5% per day penalty including weekends and public holidays. No late submissions will be accepted more than 5 days after the submission deadline, unless special consideration has been granted. No further submissions will be accepted after the marked assignments are returned and feedback is released to students.

Word Count Penalty

5% of the possible mark will be deducted per 100 words over the word limit for an assessment task. An additional 99 words beyond the limit can be written without penalty.

Assessment Tasks

Name	Weighting	Hurdle	Due
User Experience report	50%	No	Midnight 7/5/22
Fortnightly Quiz questions	0%	No	Midnight 11/6/22
Examination	50%	No	5.00pm 25/5/22

User Experience report

Assessment Type ¹: Report

Indicative Time on Task ²: 48 hours

Due: **Midnight 7/5/22**

Weighting: **50%**

This assessment task involves a report in which you examine a website of your choice and provide recommendations to address any user experience or usability issues identified.

On successful completion you will be able to:

- Demonstrate knowledge by critically analysing models and theories that purport to explain human performance and technology.
- Apply and differentiate the strategies associated with proactive and reactive human performance assessment, including practical issues and challenges.
- Diagnose human factors-related issues in the context of an applied industrial environment
- Propose solutions to improve the relationship between human performance and technology.

Fortnightly Quiz questions

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 4 hours

Due: **Midnight 11/6/22**

Weighting: **0%**

Completion of the multiple choice questions associated with each video recording

On successful completion you will be able to:

- Demonstrate knowledge by critically analysing models and theories that purport to explain human performance and technology.
- Apply and differentiate the strategies associated with proactive and reactive human performance assessment, including practical issues and challenges.

Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 48 hours

Due: **5.00pm 25/5/22**

Weighting: **50%**

Examination of course material

On successful completion you will be able to:

- Demonstrate knowledge by critically analysing models and theories that purport to explain human performance and technology.
- Apply and differentiate the strategies associated with proactive and reactive human performance assessment, including practical issues and challenges.
- Diagnose human factors-related issues in the context of an applied industrial environment
- Propose solutions to improve the relationship between human performance and technology.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

This unit consists of alternating on-campus and on-line classes. Where a class is delivered on-line, students will be expected to: (a) Review a 20 minute (approx.) video clip, read the relevant chapter in the textbook together with one or two additional papers, answer questions to a short,

on-line quiz, and undertake any activities as directed for that week. Students are expected to attend all scheduled classes. Learning objectives and assessment activities are based on the requirements of a minimum 80% on-campus class attendance. If there are exceptional circumstances where a session must be missed, this will need to be arranged with the unit convener in advance. Failure to do so implies a lack of professionalism.

Textbook: Stone, N.J., Chaparro, A., Keebler, J.R., Chaparro, B.S., & McConnell, D.S. (2018). Introduction to human factors: Applying psychology to design. Boca Raton, FL: CRC Press

Readings: Essential readings are prescribed each week (see Topic Notes) and are available via Leganto accessible through the iLearn site for this unit.

Unit Schedule

Date	Topic	Mode	Reading Requirements	Assessments
February 23	Introduction to Human Factors	On-Campus	Chapter 1	
March 2	Human Factors in Organisations	On-Campus	Chapter 11 (See Topic Notes for Readings)	
March 9	User Experience and Usability	Online Recording	Chapter 5 (See Topic Notes for Readings)	Online Quiz
March 16	Human Factors and Cognition	On-Campus	Chapter 7 (See Topic Notes for Readings)	
March 23	Human Factors and Systems Design	Online	Chapter 10 (See Topic Notes for Readings)	Online Quiz
March 30	Human Factors and Workload	On-Campus	Chapter 6 (See Topic Notes for Readings)	
April 6	Human Factors Testing	Online	Chapter 2 (See Topic Notes for Readings)	Online Quiz
April 27	Human Factors and Simulation	On-Campus	(See Topic Notes for Readings)	
May 4	Human Factors and Work Design	Online	Chapter 9 (See Topic Notes for Readings)	Online Quiz
May 11	Human Factors and Fatigue	On-Campus	(See Topic Notes for Readings)	
May 18	Human Factors and Automation	Online	Chapter 12 (Section 12.4) (See Topic Notes for Readings)	Online Quiz

May 25	Examination	Online	(See Weekly Learning Objectives)
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Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Macquarie University follow standards-based assessment of student performance. All individual assessment tasks are subject to moderation, consistent with the Assessment Policy and Procedure. A student's final mark for this unit, and associated grade, must reflect their attainment

of the unit learning outcomes, and isn't necessarily a simple summation of their individual assessment items.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.