



PSYO8922

Human Factors in New Technology

Session 1, In person-scheduled-weekday, North Ryde 2025

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 02 98509705

Room 2.617, 16 University Avenue, Australian Hearing Hub

By Appointment

Joanne Earl

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Credit points

10

Prerequisites

Admission to MOrgPsych

Corequisites

Co-badged status

Unit description

This unit considers the relationship between human performance and advanced technology, and the role of organisational psychologists in optimising this relationship. You will develop the skills necessary to undertake psychological testing in the context of human factors, undertake and interpret interviews and assessments that enable the development of human factors interventions, and will communicate findings as part of human factors reports.

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: Perform appropriate standardised psychological testing, as part of broader assessment, to assess and interpret aspects of functioning in the context of human factors. (Capability 2: Psychologist Practitioner)

ULO2: Conduct professional interviews and assessments and synthesise information

from multiple sources, including assessment of risk, to formulate a conceptualisation of the presenting issues to determine the most appropriate human factors interventions, including management of risk. (Capability 2: Psychologist Practitioner)

ULO3: Interpret and communicate findings in oral and written formats, including formal human factors reports, using culturally appropriate language. (Capability 4: Professional)

ULO4: Critically evaluate contemporary scientific literature to inform practice in human factors. (Capability 1: Scientist and Scholar)

ULO5: Apply advanced psychological knowledge of organisational paradigms of workplace and workforce performance in occupational health, safety, and well-being, to practice in organisational psychology. (Capability 2: Psychologist Practitioner)

ULO6: Apply advanced psychological knowledge of organisational paradigms of workplace and workforce performance in human factors and workplace safety, to practice in organisational psychology. (Capability 2: Psychologist Practitioner)

General Assessment Information

Grade descriptors and other information concerning grading are contained in the [Macquarie University Assessment Policy](#).

All final grades are determined by a grading committee, in accordance with the Macquarie University Assessment Policy, and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](#) (clause 128).

To pass this unit, you must demonstrate sufficient evidence of achievement of the learning outcomes, meet any ungraded requirements, and achieve a final mark of 50 or better.

Further details for each assessment task will be available on iLearn.

Late Submissions

Unless a Special Consideration request has been submitted and approved, a 5% penalty (OF THE TOTAL POSSIBLE MARK) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

| Number of days (hours) late | Total Possible Marks | Deduction | Raw mark | Final mark |
|-----------------------------|----------------------|-----------|----------|------------|
| 1 day (1-24 hours) | 100 | 5 | 75 | 70 |
| 2 days (24-48 hours) | 100 | 10 | 75 | 65 |

| | | | | |
|------------------------|-----|----|----|----|
| 3 days (48-72 hours) | 100 | 15 | 75 | 60 |
| 7 days (144-168 hours) | 100 | 35 | 75 | 40 |
| >7 days (>168 hours) | 100 | - | 75 | 0 |

Late submission of time sensitive tasks, such as timetabled tests/exams, scheduled performance assessments/presentations, scheduled practical assessments/labs, will be addressed by the unit convenor in a Special consideration application.

Special Consideration

If you are unable to complete an assessment task on or by the specified date due circumstances that are unexpected, unavoidable, significantly disruptive and beyond your control, you may apply for special consideration in accordance with the [special consideration policy](#). Applications for special consideration must be supported by appropriate evidence and submitted via ask.mq.edu.au.

Assessment Tasks

| Name | Weighting | Hurdle | Due |
|-----------------------------------------|-----------|--------|------------|
| User Experience report | 50% | No | 12/04/2025 |
| Human Factors Test Plan | 50% | No | 24/05/2025 |

User Experience report

Assessment Type ¹: Report

Indicative Time on Task ²: 50 hours

Due: **12/04/2025**

Weighting: **50%**

This assessment task involves a report in which students examine a website interface and identify any user experience or usability issues and propose and justify recommendations.

On successful completion you will be able to:

- Perform appropriate standardised psychological testing, as part of broader assessment, to assess and interpret aspects of functioning in the context of human factors. (Capability

2: Psychologist Practitioner)

- Conduct professional interviews and assessments and synthesise information from multiple sources, including assessment of risk, to formulate a conceptualisation of the presenting issues to determine the most appropriate human factors interventions, including management of risk. (Capability 2: Psychologist Practitioner)
- Interpret and communicate findings in oral and written formats, including formal human factors reports, using culturally appropriate language. (Capability 4: Professional)
- Apply advanced psychological knowledge of organisational paradigms of workplace and workforce performance in human factors and workplace safety, to practice in organisational psychology. (Capability 2: Psychologist Practitioner)

Human Factors Test Plan

Assessment Type ¹: Plan

Indicative Time on Task ²: 50 hours

Due: **24/05/2025**

Weighting: **50%**

This assessment task involves the development of a human factors test plan to evaluate the outcomes of students' recommendations from their user experience report.

On successful completion you will be able to:

- Conduct professional interviews and assessments and synthesise information from multiple sources, including assessment of risk, to formulate a conceptualisation of the presenting issues to determine the most appropriate human factors interventions, including management of risk. (Capability 2: Psychologist Practitioner)
- Interpret and communicate findings in oral and written formats, including formal human factors reports, using culturally appropriate language. (Capability 4: Professional)
- Critically evaluate contemporary scientific literature to inform practice in human factors. (Capability 1: Scientist and Scholar)
- Apply advanced psychological knowledge of organisational paradigms of workplace and workforce performance in occupational health, safety, and well-being, to practice in organisational psychology. (Capability 2: Psychologist Practitioner)
- Apply advanced psychological knowledge of organisational paradigms of workplace and workforce performance in human factors and workplace safety, to practice in organisational psychology. (Capability 2: Psychologist Practitioner)

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

As a student enrolled in this unit, you will engage in a range of online and face-to-face learning activities, including readings, workshops exercises and videos. Details can be found on the iLearn site for this unit.

Required Reading

Wiggins, M.W. (2022). *An Introduction to Human Factors for Organisational Psychologists*. Boca Raton, FL: CRC Press.

As Directed in Topic Notes

Technology Used

Active participation in the learning activities throughout the unit will require students to have access to a tablet, laptop or similar device. Students who do not own their own laptop computer may borrow one from the university library.

Unit Schedule

| Date | Topic | Mode | Reading Requirements | Assessments |
|-----------------------------------|-------------------------------------------------------------------------|-----------|---------------------------------------------|-------------|
| February 27 (5.00pm – 7.00 pm) | Introduction to Human Factors and Human Error Mark Wiggins | On Campus | Chapter 1 Chapter 4 (See Topic Notes) | |
| March 6 (5.00pm - 7.00pm) | Human Factors in Organisations and System Safety Mark Wiggins | Online | Chapter 2 Chapter 5 (See Topic Notes) | |

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|-------------------------------|-------------------------------------------------------------------------------|-----------|-------------------------------------------------------------|-----------------------------|
| March 13 (5.00pm - 7.00pm) | System Evaluation, Usability, and User Experience Mark Wiggins | On Campus | Chapter 20 (See Topic Notes) | |
| March 20 (5.00pm - 7.00pm) | Information Processing, Workload, and Attention Mark Wiggins | Online | Chapter 8 Chapter 9 (See Topic Notes) | |
| March 27 (5.00pm - 7.00pm) | Decision-Making and Situational Awareness Mark Wiggins | On-Campus | Chapter 10 Chapter 11 (See Topic Notes) | |
| April 3 (5.00pm - 7.00pm) | Hazard Analysis and Cognitive Task Analysis Mark Wiggins | Online | Chapter 17 Chapter 18 (See Topic Notes) | |
| April 10 (5.00pm - 7.00pm) | Human Factors Testing and Reporting | On-Campus | Chapter 27 Chapter 30 (See Topic Notes) | User Experience Report Due |
| May 1 (5.00pm - 7.00pm) | Risk and Human Reliability Mark Wiggins | Online | Chapter 3 Chapter 7 (See Topic Notes) | |
| May 8 (5.00pm - 7.00pm) | Aviation Systems and Accident Investigation Mark Wiggins | On-Campus | Chapter 19 Chapter 23 (See Topic Notes) | |
| May 15 (5.00pm - 7.00pm) | Human Factors in Energy, Marine, and Healthcare Mark Wiggins | Online | Chapter 24 Chapter 25 Chapter 26 (See Topic Notes) | |
| May 22 (5.00pm - 7.00pm) | Human Factors in Practice Human Factors and Fatigue Mark Wiggins | On-Campus | Chapter 12 (See Topic Notes) | |
| May 29 (5.00pm - 7.00pm) | Human Engineering and Ergonomics Mark Wiggins | Online | Chapter 6 Chapter 21 (See Topic Notes) | Human Factors Test Plan Due |

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|-----------------------------|--------------------------------------------------------------|-----------|---------------------------------|
| June 5 (5.00pm - 7.00pm) | Human Factors and Resource Management Mark Wiggins | On-Campus | Chapter 16 (See Topic Notes) |
|-----------------------------|--------------------------------------------------------------|-----------|---------------------------------|

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 connect.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](#).

Student Support

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

Academic Success

[Academic Success](#) 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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), 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.

Inclusion and Diversity

Social inclusion at Macquarie University is about giving everyone who has the potential to benefit from higher education the opportunity to study at university, participate in campus life and flourish in their chosen field. The University has made significant moves to promote an equitable, diverse and exciting campus community for the benefit of staff and students. It is your responsibility to contribute towards the development of an inclusive culture and practice in the areas of learning and teaching, research, and service orientation and delivery. As a member of the Macquarie University community, you must not discriminate against or harass others based on their sex, gender, race, marital status, carers' responsibilities, disability, sexual orientation, age, political conviction or religious belief. All staff and students are expected to display appropriate behaviour that is conducive to a healthy learning environment for everyone.

Professionalism

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our courses.

As part of developing professionalism, students are expected to attend all small group interactive sessions including clinical, practical, laboratory, work-integrated learning (e.g., PACE placements), and team-based learning activities. Some learning activities are recorded (e.g., face-to-face lectures), however you are encouraged to avoid relying upon such material as they do not recreate the whole learning experience and technical issues can and do occur. As an adult learner, we respect your decision to choose how you engage with your learning, but we would remind you that the learning opportunities we create for you have been done so to enable your success, and that by not engaging you may impact your ability to successfully complete this unit. We equally expect that you show respect for the academic staff who have worked hard to develop meaningful activities and prioritise your learning by communicating with them in advance if you are unable to attend a small group interactive session.

Another dimension of professionalism is having respect for your peers. It is the right of every student to learn in an environment that is free of disruption and distraction. Please arrive to all learning activities on time, and if you are unavoidably detained, please join activity as quietly as possible to minimise disruption. Phones and other electronic devices that produce noise and other distractions must be turned off prior to entering class. Where your own device (e.g., laptop) is being used for class-related activities, you are asked to close down all other applications to avoid distraction to you and others. Please treat your fellow students with the utmost respect. If you are uncomfortable participating in any specific activity, please let the relevant academic know.

Changes since First Published

| Date | Description |
|------------|-----------------------------------------------------------------------------|
| 17/02/2025 | The dates on the unit schedule were incorrect. They have now been corrected |

Unit information based on version 2025.03 of the [Handbook](#)