PSYO922

Human Factors and New Technology

S1 Evening 2018

Department of Psychology

Contents

General Information

Unit convenor and teaching staff
Lecturer
Mark Wiggins
mark.wiggins@mq.edu.au
Contact via Email
C3A529
By Appointment

Credit points
4

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:

Knowledge outcomes: Describe the development of human factors as a discipline; Outline models and theories that purport to explain human performance; List the strategies associated with human performance assessment; Give examples of the tools and processes associated with proactive approaches to assessments of human performance; Give examples of the tools and processes associated with reactive approaches to assessments of human performance; Outline the integration between

human factors and engineering; and Discuss the practical issues and challenges in organisations that relate to productivity.

Specific skill outcomes: Prepare and carry out a usability analysis; Undertake and summarise the outcomes of a cognitive interview; Develop and defend a human factors test plan; and Propose solutions to improve the relationship between human performance and technology.

Generic skill outcomes: Literacy (particularly through the written assignments); Creative thinking and problem-solving skills (particularly though the class activities); Interpersonal and team and skills (particularly through the class activities); Communication skills (though the oral presentation and class activities); and Critical analysis skills (particularly though the class activities).

Assessment Tasks

Name	Weighting	Hurdle	Due
User Experience Report	50%	No	9th April 2018
Human Factors Test Plan	50%	No	4th June 2018
Multiple Choice Questions	0%	Yes	8th June 2018

User Experience Report

Due: **9th April 2018**
Weighting: **50%**

Description: 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 (including wire frames), an outline of the intended goals, and a summary of the significance of the website for the organisation;
2. A description of the investigative approach and a justification of the tools selected to identify both positive and negative features of the website (tools used must include at least an interview and an observation of user interaction);
3. A summary of the outcomes of the investigation (e.g. frequency of errors, path summary);
4. Specific recommendations to improve user experience and the usability of the website.

On successful completion you will be able to:
- Knowledge outcomes: Describe the development of human factors as a discipline; Outline models and theories that purport to explain human performance; List the strategies associated with human performance assessment; Give examples of the tools and processes associated with proactive approaches to assessments of human performance; Give examples of the tools and processes associated with reactive approaches to assessments of human performance; Outline the integration between human factors and engineering; and Discuss the practical issues and challenges in organisations that relate to productivity.
- Specific skill outcomes: Prepare and carry out a usability analysis; Undertake and summarise the outcomes of a cognitive interview; Develop and defend a human factors test plan; and Propose solutions to improve the relationship between human performance and technology.

Human Factors Test Plan

Due: **4th June 2018**
Weighting: **50%**

This task involves the development of a human factors test plan for (ideally) one or more of the recommendations that you identified in Assessment 1. Your goal is to develop a succinct, cost-effective plan that might be submitted to management to obtain support for a human factors test. A template will be provided to assist with the completion of the test plan.

On successful completion you will be able to:
- Specific skill outcomes: Prepare and carry out a usability analysis; Undertake and summarise the outcomes of a cognitive interview; Develop and defend a human factors test plan; and Propose solutions to improve the relationship between human performance and technology.

Multiple Choice Questions

Due: **8th June 2018**
Weighting: **0%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Completion of the multiple choice questions associated with each video recording is a terms 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.

On successful completion you will be able to:

- Knowledge outcomes: Describe the development of human factors as a discipline; Outline models and theories that purport to explain human performance; List the strategies associated with human performance assessment; Give examples of the tools and processes associated with proactive approaches to assessments of human performance; Give examples of the tools and processes associated with reactive approaches to assessments of human performance; Outline the integration between human factors and engineering; and Discuss the practical issues and challenges in organisations that relate to productivity.
- Generic skill outcomes: Literacy (particularly through the written assignments); Creative thinking and problem-solving skills (particularly though the class activities); Interpersonal and team and skills (particularly through the class activities); Communication skills (though the oral presentation and class activities); and Critical analysis skills (particularly though the class activities).

Delivery and Resources

This unit consists of alternating face-to-face and on-line classes. Face-to-face classes will be held between 5.00pm and 7.00pm on Mondays. Where a class in 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% 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.

Required readings include chapters from the textbook, and readings listed in the Topic Notes

Textbook: Kroemer, K.H.E. (2017). *Fitting the human* (7th ed). Boca Raton, FJ: CRC Press.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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

- Grade Appeal Policy

- Complaint Management Procedure for Students and Members of the Public

- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

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

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results shown in *iLearn*, 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.

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops

- StudyWise

- Academic Integrity Module for Students

- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

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.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcome

- Generic skill outcomes: Literacy (particularly through the written assignments); Creative thinking and problem-solving skills (particularly though the class activities); Interpersonal and team and skills (particularly through the class activities); Communication skills (though the oral presentation and class activities); and Critical analysis skills (particularly though the class activities).

Assessment tasks

- Human Factors Test Plan
- Multiple Choice Questions

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcome

- Knowledge outcomes: Describe the development of human factors as a discipline; Outline models and theories that purport to explain human performance; List the strategies associated with human performance assessment; Give examples of the tools and processes associated with proactive approaches to assessments of human performance; Give examples of the tools and processes associated with reactive approaches to assessments of human performance; Outline the integration between

human factors and engineering; and Discuss the practical issues and challenges in organisations that relate to productivity.

Assessment tasks

- User Experience Report
- Human Factors Test Plan

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcome

- Knowledge outcomes: Describe the development of human factors as a discipline; Outline models and theories that purport to explain human performance; List the strategies associated with human performance assessment; Give examples of the tools and processes associated with proactive approaches to assessments of human performance; Give examples of the tools and processes associated with reactive approaches to assessments of human performance; Outline the integration between human factors and engineering; and Discuss the practical issues and challenges in organisations that relate to productivity.

Assessment tasks

- User Experience Report
- Human Factors Test Plan

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcome

- Specific skill outcomes: Prepare and carry out a usability analysis; Undertake and summarise the outcomes of a cognitive interview; Develop and defend a human factors

test plan; and Propose solutions to improve the relationship between human

performance and technology.

Assessment tasks

- User Experience Report

- Human Factors Test Plan

- Multiple Choice Questions

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcome

- Specific skill outcomes: Prepare and carry out a usability analysis; Undertake and

  summarise the outcomes of a cognitive interview; Develop and defend a human factors

  test plan; and Propose solutions to improve the relationship between human

  performance and technology.

Assessment tasks

- User Experience Report

- Human Factors Test Plan

- Multiple Choice Questions

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcome

- Generic skill outcomes: Literacy (particularly through the written assignments); Creative

  thinking and problem-solving skills (particularly though the class activities); Interpersonal

  and team and skills (particularly through the class activities); Communication skills

  (though the oral presentation and class activities); and Critical analysis skills (particularly

though the class activities).

Assessment tasks

- User Experience Report
- Multiple Choice Questions