PSYO922

Human Factors and New Technology

S1 Evening 2016

Department of Psychology

Contents

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General Information

Unit convenor and teaching staff
Mark Wiggins
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Credit points
4

Prerequisites
Admission to DOrgPsych or MOrgPsych or GradCertBusPsych or GradDipBusPsych

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 the case for 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 workshop activities); • Interpersonal and team and skills (particularly through the workshop activities); • Communication skills (though the oral presentation and workshop activities); and • Critical analysis skills (particularly though the workshop activities).

Assessment Tasks

Name	Weighting	Due
Cognitive Interview Report	50%	8/04/16
Human Factors Test Plan	50%	23/05/16
Multiple Choice Questions	0%	10/06/2016

Cognitive Interview Report

Due: **8/04/16**

Weighting: **50%**

Description: This assessment task involves a report in which you identify a user experience issue, undertake a cognitive interview with at least three users, and formulate a report concerning the outcomes.

Your report should include:

1.   A description of the problem; 2.   A description of the tasks analysed, including how they were selected; 3.   A description of the methods of data acquisition, including the selection of the participants, the materials employed, and the procedures used; 4.   A description of the process of data analysis; 5.   A report of the results; and 6.   Recommendations

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 the case for 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 workshop activities); • Interpersonal and team and skills (particularly through the workshop activities); • Communication skills (though the oral presentation and workshop activities); and • Critical analysis skills (particularly though the workshop activities).

Human Factors Test Plan

Due: **23/05/16**
Weighting: **50%**

This task involves the development of a human factors test plan for one or more of the recommendations that you identified in Assessment I. Your goal is to develop a succinct, cost-effective plan that might be submitted to management to obtain support for a human factors test.

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 the case for 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 workshop activities); • Interpersonal and team and skills (particularly through the workshop activities); • Communication skills (though the oral presentation and workshop activities); and •

Critical analysis skills (particularly though the workshop activities).

Multiple Choice Questions

Due: **10/06/2016**
Weighting: **0%**

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.
- Specific skill outcomes: • Prepare and carry out a usability analysis; • Undertake and summarise the outcomes of a cognitive interview; • Develop and defend the case for 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 workshop activities); • Interpersonal and team and skills (particularly through the workshop activities); • Communication skills (though the oral presentation and workshop activities); and • Critical analysis skills (particularly though the workshop 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 review a 20 minute video clip, read the relevant readings that are prescribed, answer questions to a short, on-line quiz, and undertake any activities as directed for that week.

Unit Schedule

The Unit Schedule will be available to download from iLearn

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central. Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/grading/policy.html

Grade Appeal Policy http://mq.edu.au/policy/docs/gradeappeal/policy.html

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the Learning and Teaching Category of 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/support/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

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

Assessment task

- Human Factors Test Plan

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 outcomes

- 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 the case for a human factors test plan; and • Propose solutions to improve the relationship between human performance and technology.

Assessment tasks

- Cognitive Interview Report
- Human Factors Test Plan
- Multiple Choice Questions

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 outcomes

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

- Cognitive Interview 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 the case for a human factors test plan; and • Propose solutions to improve the relationship between human performance and technology.

Assessment tasks

- Cognitive Interview Report
- Human Factors Test Plan

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 outcomes

- 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.

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Critical analysis skills (particularly though the workshop activities).

Assessment tasks

- Cognitive Interview Report
- Human Factors Test Plan