FOSE3005

Global Challenges Project

Full year 1, Weekday attendance, North Ryde 2021

Science and Engineering Faculty level units

Contents

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Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to timetable viewer. To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff
Scott Wilson
scott.p.wilson@mq.edu.au
Room 438, 12 Wally's Walk

Credit points
20

Prerequisites
(FOSE2005 or FOSC201) and 50cp at 2000 level

Corequisites

Co-badged status

Unit description
In this unit students will develop their understanding of global challenges by undertaking a large scale project applying Science and Technology to a significant real world problem. Students will work in groups at developing innovative and practical solutions to their chosen problem. Problems will be chosen from across the spectrum of challenges facing modern society, such as sustainable development, climate change, resource management, data security, health and global decision making. The group project will enable students to continue developing their skills in leadership, communication, entrepreneurial practice, reflection and leadership.

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: Analyse a complex global problem and propose a solution to an aspect or instance of that problem.

ULO2: Apply core knowledge from their discipline to the solution of a real world problem.

ULO3: Plan a major project, including the design of necessary processes, information management and records keeping.

ULO4: Communicate about science and technology, in the context of global challenges,

to a variety of audiences.

ULO5: Work effectively, constructively and safely, as an individual and as part of a team, applying knowledge of ethical principles and professional conduct.

General Assessment Information

Detailed information regarding each assessment task will be provided on the Unit's iLearn page.

Assessment Tasks

Name	Weighting	Hurdle	Due
Background To issue	20%	No	26/03/2021
Market Analysis and Feasibility report	20%	No	21/05/2021
Active participation in Workshops	10%	No	Various dates across the unit
Pitch	10%	No	08/10/2021
Final report	40%	No	29/10/2021

Background To issue

Assessment Type [1]: Literature review
Indicative Time on Task [2]: 20 hours
Due: **26/03/2021**
Weighting: **20%**

This essay will outline in detail the background of the problem the project is aiming to solve and a brief proposal to solve it.

On successful completion you will be able to:

• Analyse a complex global problem and propose a solution to an aspect or instance of that problem.

• Apply core knowledge from their discipline to the solution of a real world problem.

• Communicate about science and technology, in the context of global challenges, to a variety of audiences.

Market Analysis and Feasibility report

Assessment Type [1]: Project
Indicative Time on Task [2]: 60 hours
Due: **21/05/2021**

Weighting: **20%**

Using principles taught in workshops, students will assess the feasibility of the proposal by interviewing a minimum of 20 stakeholders.

On successful completion you will be able to:

- Plan a major project, including the design of necessary processes, information management and records keeping.
- Communicate about science and technology, in the context of global challenges, to a variety of audiences.
- Work effectively, constructively and safely, as an individual and as part of a team, applying knowledge of ethical principles and professional conduct.

Active participation in Workshops

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 20 hours
Due: **Various dates across the unit**
Weighting: **10%**

Assessment of the extent of active, willful and consistent participation in activities and workshops held.

On successful completion you will be able to:

- Plan a major project, including the design of necessary processes, information management and records keeping.
- Work effectively, constructively and safely, as an individual and as part of a team, applying knowledge of ethical principles and professional conduct.

Pitch

Assessment Type [1]: Presentation
Indicative Time on Task [2]: 30 hours
Due: **08/10/2021**
Weighting: **10%**

The pitch will be aimed at investors so will heavily focus on financial feasibility of the project.

On successful completion you will be able to:

- Communicate about science and technology, in the context of global challenges, to a variety of audiences.
- Work effectively, constructively and safely, as an individual and as part of a team, applying knowledge of ethical principles and professional conduct.

Final report

Assessment Type [1]: Report
Indicative Time on Task [2]: 30 hours
Due: **29/10/2021**
Weighting: **40%**

A report in form of a stripped down business plan will be presented that communicates the most salient aspects of the project including submissions of prototypes of products or services.

On successful completion you will be able to:

- Analyse a complex global problem and propose a solution to an aspect or instance of that problem.
- Apply core knowledge from their discipline to the solution of a real world problem.
- Communicate about science and technology, in the context of global challenges, to a variety of audiences.
- Work effectively, constructively and safely, as an individual and as part of a team, applying knowledge of ethical principles and professional conduct.

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[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

Teaching and Learning Strategy

Each student group is responsible for the delivery of a report on an environmental/ societal issue or need to a client. The client may be either inside or outside the University. The projects are real projects that the client wants done to advance their environmental or sustainability practice in one way or another.

The teaching and learning strategy includes:

• skills workshops ;

• self learning resources on handling group work for clients;

• regular group meetings on managing team processes, project management, and substantive components of the task with the convenor;

• group interaction, dialogue and problem solving in a participative way;

• through class interaction, practice of presentations;

• learning to give and receive professional feedback from peers;

• reflection on your own professional practice;

• feedback from clients.

Technology and Resources

There is an ilearn site associated with this unit. This will be the main form of communication for detailed information and updates. Students must be able to access the internet to research background for these projects. Some resources such as equipment, laboratories and minor consumables may be available for student use.

Unit Schedule

The unit will have 10 formal workshop style classes plus informal update meetings. This will be scheduled at fortnightly intervals. As the unit is project based, work outside of these times and in session breaks is likely to be required.

FOSE3005 Unit Schedule 2021

S1 Week	Topic	Assessment
1	Unit Overview and Project Ideas	
3	Writing Literature Reviews	
5	Scoping a Project	Literature Review (20%) – 26/03/2021
7	*Project Updates*	
9	Feasibility Reporting	
11	Meeting Client Needs	Proposal and Feasibility report (20%) – 21/05/2021
13	*Project Updates*	
Mid Year Break	Some project work may be required	

S2 Week		
1	Presenting to a Client	
3	*Project Updates*	
5	Data Interpretation and analysis	
7	Reporting to Clients	
9	Practice Presentations	Presentation to Client (10%) – 08/10/2021
11	*Project Updates*	Final Report (40%) – 29/10/2021
13	Project Reflection	Participation (10%) – All formal classes

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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
- Grade Appeal Policy
- Complaint Management 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). 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) 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

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 help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- 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

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

If you are a Global MBA student contact globalmba.support@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.