ENGG8106
Engineering Innovation and Entrepreneurship
Session 1, In person-scheduled-weekday, North Ryde 2024
School of Engineering

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General Information

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Credit points
10

Prerequisites
30cp at 3000 level or above

Corequisites

Co-badged status

Unit description
This unit is designed to equip students with the necessary skills and knowledge to develop scalable startups and work effectively in engineering organizations with an entrepreneurial mindset. Through this course, students will learn the fundamental knowledge and procedures necessary for creating successful ventures, including the process of understanding customer requirements and translating them into product specifications, as well as designing a process for production. Other key aspects of entrepreneurship will also be covered, including business planning, financial management, sources of finance, crowdfunding, entrepreneurial behaviour, and technology management.

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: Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management.

ULO2: Build an entrepreneurial mindset for value creation in existing business and create new business.

ULO3: Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures.

ULO4: Identify and pursue business opportunities, and create value for all stakeholders.

ULO5: Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

**General Assessment Information**

Business Proposal Assessment Type 1: Project Indicative Time on Task 2: 30 hours Due: **Week 12** Weighting: 40% Written report on a new venture with the purpose of gaining funding to start the business

On successful completion you will be able to: • Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management. • Build an entrepreneurial mindset for value creation in existing business and create new business. • Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures. • Identify and pursue business opportunities, and create value for all stakeholders. • Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

Active Engagement Assessment Type 1: Simulation/role play Indicative Time on Task 2: 12 hours Due: **All Weeks** Weighting: 10% Active Engagement and Contribution in the tutorial activities

On successful completion you will be able to: • Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management. • Build an entrepreneurial mindset for value creation in existing business and create new business. • Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures. • Identify and pursue business opportunities, and create value for all stakeholders. • Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

Midterm group project Assessment Type 1: Project Indicative Time on Task 2: 16 hours Due: **Week 7** Weighting: 20% Midterm group project and team work activity

On successful completion you will be able to: • Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management. • Build an entrepreneurial mindset for value creation in existing business and create new business. • Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures. • Identify and pursue business opportunities, and create value for all stakeholders. • Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

Case Studies Assessment Type 1: Case study/analysis Indicative Time on Task 2: 12 hours Due: **Weeks 2, 4, 6, 10, & 11** Weighting: 30% Case studies on Engineering Entrepreneurship

On successful completion you will be able to: • Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management. • Build an entrepreneurial mindset for value creation in existing business and create new business. • Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures. • Identify and pursue business opportunities, and create value for all stakeholders. • Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.
knowledge and theoretical frameworks related to entrepreneurial behaviour in business management. • Build an entrepreneurial mindset for value creation in existing business and create new business. • Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures. • Identify and pursue business opportunities, and create value for all stakeholders. • Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

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 Learning Skills Unit 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

### Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm group project</td>
<td>20%</td>
<td>No</td>
<td>Week 7</td>
</tr>
<tr>
<td>Case Studies</td>
<td>30%</td>
<td>No</td>
<td>Week 2, 5, 6, 10, 11</td>
</tr>
<tr>
<td>Active Engagement</td>
<td>10%</td>
<td>No</td>
<td>Week 8</td>
</tr>
<tr>
<td>Business Proposal</td>
<td>40%</td>
<td>No</td>
<td>Week 12</td>
</tr>
</tbody>
</table>

**Midterm group project**

Assessment Type ¹: Project  
Indicative Time on Task ²: 16 hours  
Due: **Week 7**  
Weighting: **20%**

Midterm group project and team work activity

On successful completion you will be able to:

- Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management.
- Build an entrepreneurial mindset for value creation in existing business and create new business.
- Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures.
- Identify and pursue business opportunities, and create value for all stakeholders.
- Apply the process of capturing market and customer needs and converting these to a
viable and sustainable products.

Case Studies
Assessment Type 1: Case study/analysis
Indicative Time on Task 2: 30 hours
Due: Week 2, 5, 6, 10, 11
Weighting: 30%

Case studies on Engineering Entrepreneurship

On successful completion you will be able to:
- Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management.
- Build an entrepreneurial mindset for value creation in existing business and create new business.
- Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures.
- Identify and pursue business opportunities, and create value for all stakeholders.
- Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

Active Engagement
Assessment Type 1: Simulation/role play
Indicative Time on Task 2: 0 hours
Due: Week 8
Weighting: 10%

Active Engagement and Contribution in the classroom SGTA activities

On successful completion you will be able to:
- Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management.
- Build an entrepreneurial mindset for value creation in existing business and create new business.
- Develop comprehensive knowledge business planning, financial management and
technology management to develop successful ventures.

- Identify and pursue business opportunities, and create value for all stakeholders.
- Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

**Business Proposal**

**Assessment Type 1:** Project  
**Indicative Time on Task 2:** 30 hours  
**Due:** Week 12  
**Weighting:** 40%

Written report on a new venture with the purpose of gaining funding to start the business

On successful completion you will be able to:

- Apply the fundamental knowledge and theoretical frameworks related to entrepreneurial behaviour in business management.
- Build an entrepreneurial mindset for value creation in existing business and create new business.
- Develop comprehensive knowledge business planning, financial management and technology management to develop successful ventures.
- Identify and pursue business opportunities, and create value for all stakeholders.
- Apply the process of capturing market and customer needs and converting these to a viable and sustainable products.

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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**

## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Content / Reference</th>
<th>Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course overview. Background to innovation and entrepreneurship.</td>
<td>Ch. 1</td>
<td>Dow Corning Deck Protector</td>
</tr>
<tr>
<td>2</td>
<td>Opportunities and Strategies</td>
<td>Ch. 2, 3, 4, 5</td>
<td>Dr Johns Products*</td>
</tr>
<tr>
<td>3</td>
<td>Concept Summary &amp; Risk</td>
<td>Ch. 6 &amp; 7</td>
<td>Ecowash- Lean Start Up</td>
</tr>
<tr>
<td>4</td>
<td>Intellectual Property – Patent Searching</td>
<td>Guest Lecturer</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Intellectual Property – Patenting Process</td>
<td>Guest Lecturer</td>
<td>Molecular Insights Pharmaceuticals*</td>
</tr>
<tr>
<td>6</td>
<td>Product Development. Marketing and Sales. Types of Ventures.</td>
<td>Ch. 8, 9, &amp; 10</td>
<td>Google Glass Development*</td>
</tr>
<tr>
<td>7</td>
<td>New Enterprise, Resources and Operations</td>
<td>Ch 12, 13, &amp; 14</td>
<td>DJI Innovation – Product Development for Start Ups</td>
</tr>
<tr>
<td>8</td>
<td>Entrepreneurship Simulation – The Start Up Game</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Design for Six Sigma</td>
<td></td>
<td>DfSS at Ford.</td>
</tr>
<tr>
<td>10</td>
<td>The Financial Plan &amp; Sources of Capital</td>
<td>Ch.16, 17, &amp; 18</td>
<td>Equity Crowdfunding Symbid Entering the US*</td>
</tr>
<tr>
<td>11</td>
<td>Deal Presentations, Negotiations and Leading Ventures to Success</td>
<td>Ch 19 &amp; 20</td>
<td>How to pitch a brilliant idea. *</td>
</tr>
<tr>
<td>12</td>
<td>Presentation / Pitch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tutorials

* Discuss in class and hand in Case Study Questions

## 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:
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

**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/

**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 Advocacy provides independent advice on MQ policies, procedures, and processes

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.

EA Competency
Master of Engineering Management is not EA accredited and therefore not applicable.

Unit information based on version 2024.03 of the Handbook