

<b>Title:</b>	Ideas, Inventions, Innovations <b>APPROVED</b>
<b>Long Title:</b>	Ideas, Inventions, Innovations
<b>Module Code:</b>	INTR7004
<b>Credits:</b>	5
<b>NFQ Level:</b>	Intermediate
<b>Field of Study:</b>	Interdisciplinary Engineering
<b>Valid From:</b>	Semester 1 - 2014/15 ( September 2014 )
<b>Module Delivered in</b>	<a href="#">4 programme(s)</a>
<b>Module Coordinator:</b>	JOSEPH CONNELL
<b>Module Author:</b>	MARTIN HILL
<b>Module Description:</b>	This module guides students through the process of generating potential business ideas based on their personal experiences. The module students then assess the idea feasibility from technical, personal and financial perspectives. Finally the module guides students through the innovation steps required to develop ideas into potentially successful businesses based on a business plan.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Perform a need analysis based on personal experience to identify opportunities to provide goods or services to better meet market needs than currently existing solutions.
LO2	Assess the technical and commercial feasibility of an idea/invention.
LO3	Identify potential intellectual property and research invention patents.
LO4	Determine the best available technology, cost and funding sources for developing a practical prototype product.
LO5	Assess the potential market for the idea and develop an outline plan for commercialisation of an invention.
LO6	Perform case studies on the route to commercialisation of new products.
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b>	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	
<b>Incompatible Modules</b>	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b>	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
<b>Co-requisites</b>	

No Co Requisites listed

**Module Content & Assessment**

**Indicative Content**

**Invention history**

Review of the significant inventions and developments in the last century with lessons to be learned.

**Invention Process**

Review process of problem identification, technology application, prototype realisation, productisation and commercialisation.

**Feasibility assessment**

Generate or chose a product/service idea and assess its technical, personal and financial feasibility.

**Intellectual Property**

Identification of novel intellectual property. Patent searching and application for IP protection.

**Innovation**

Development of a functional prototype, performance assessment, developing a manufacturing plan and routes to commercial success.

**Business plan and presentation**

Prepare a business plan for idea commercialisation. The plan will include cash flow and profitability estimates based on technical breakdown of the idea.

**Assessment Breakdown**

%

Course Work

100.00%

**Course Work**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	Invention assessment/IP report	1,2,3,6	30.0	Week 6
Performance Evaluation	Idea generation and presentation/ Contribution to group activity on idea selection and development	1,2,3,4,5,6	40.0	Every Second Week
Written Report	Prototype development/Commercialisation Plan	2,3,4,5,6	30.0	Sem End

No End of Module Formal Examination

**Reassessment Requirement**

**Coursework Only**

*This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.*

**The institute reserves the right to alter the nature and timings of assessment**

**Module Workload**

**Workload: Full Time**

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Blend of lecturer led discussions on innovation process and student development of individual business ideas	3.0	Every Week	3.00
Lab	Student application of theory to specific idea progression for commercial assessment	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Independent innovation progression and self evaluation	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

**Workload: Part Time**

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Blend of lecturer led discussions on innovation process and student development of individual business ideas	3.0	Every Week	3.00
Independent & Directed Learning (Non-contact)	Independent innovation progression and self evaluation	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

Module Resources
<i>Supplementary Book Resources</i>
<ul style="list-style-type: none"> <li>• Mark Stefik and Barbara Stefik 2006, <i>Breakthrough: Stories and Strategies of Radical Innovation</i>, The MIT Press USA [ISBN: 0-262-19514-3]</li> </ul>
<i>This module does not have any article/paper resources</i>
<i>Other Resources</i>
<ul style="list-style-type: none"> <li>• Website:: <i>EBioDesign website</i>, Stanford University  <a href="http://www.stanford.edu/group/biodesign/cgi-bin/ebiodesign/">http://www.stanford.edu/group/biodesign/cgi-bin/ebiodesign/</a></li> <li>• Website:: <i>n/a</i>  <a href="http://www.hbs.edu/entrepreneurship/resources/businessplan.html">http://www.hbs.edu/entrepreneurship/resources/businessplan.html</a></li> </ul>

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_EEPSY_8	<a href="#"><u>Bachelor of Engineering (Honours) in Electrical Engineering</u></a>	5	Elective
CR_EELES_8	<a href="#"><u>Bachelor of Engineering (Honours) in Electronic Engineering</u></a>	5	Elective
CR_EELEC_7	<a href="#"><u>Bachelor of Engineering in Electrical Engineering</u></a>	5	Elective
CR_EELXE_7	<a href="#"><u>Bachelor of Engineering in Electronic Engineering</u></a>	5	Elective