

## Entrepreneurship and Innovation for Engineers

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### Abstract

This module aims to provide the students with a firm understanding of the theory, practices and importance of Entrepreneurship in both the small to medium enterprise across to larger multinational organisations. It is intended to introduce the students to the current academic research and theories of 'entrepreneurship' including related concepts such as the 'Techno entrepreneur', the 'Serial Entrepreneur' and more. After this detailed review the module considers the concept of 'Innovation' incorporating the problems faced by the entrepreneur through the innovation process whilst progressing more deeply into innovation within organisations.

### Background and key features

<b>Module size</b>	Single
<b>CATS points</b>	12 credits
<b>ECTS credits</b>	6
<b>Open / restricted</b>	Restricted
<b>Availability on/off campus</b>	On/off campus
<b>Total student study hours</b>	120
<b>Number of weeks</b>	3 weeks full-time or 9 weeks part-time

This module runs as the final module of the School of Engineering's MBA program. It is run over the period of 3 weeks full time which gives the students one week of reading materials, one week engaged in lectures and group activities to support the materials read and a final week to complete the module's individual assignment.

The cohort is students of mixed backgrounds often with a large overseas contingency and the module has been designed with this in mind.

The module has a mix of tasks within it and through the second taught week they usually receive a lecture through the morning session with group-based activities in the afternoon, which are designed to support the theory taught.

### Why run the module?

Traditionally Entrepreneurship has been considered to be a Business School topic and as such has been taught by people with a more predominantly business background than an engineering one. This has resulted in more emphasis on business skills than innovation and product development. As a consequence we have ended up either with a group of people who can manage a business but with no idea of how to develop a product or nurture innovation within their environment, or a group of people with a great engineering idea and not a clue what to do with it. This module has been designed to encourage the innovation of engineers whilst providing them with the basic skills to avoid some of the major pitfalls of business development.

In addition to this, funding has become available to develop materials following recent government initiatives to encourage the teaching and development of innovation and entrepreneurship at all levels of the curriculum. Also the course title is appealing to the students and this helps with recruitment.

### **What skills and abilities are enhanced and developed?**

Initially the students are encouraged to 'think out of the box' in an attempt to engage the students in innovative thinking to develop solutions to problems.

This is then followed by training them to defend or 'pitch' their idea to colleagues, as they would have to do in a real life situation.

They are also encouraged to think about managing and valuing entrepreneurs within the larger organisations and to examine how to be an intrapreneur and to foster an innovative environment within an organisation.

### **What skills and attributes do students need to embark on the module?**

It would be assumed that they have successfully completed the previous nine MBA modules which will provide them with the more basic tools required such as the ability to work in groups, project management, report writing etc. However they are encouraged to tackle the module with an open mind.

### **What is the role of the lecturer and others?**

The lecturer's role is to design, write, manage and deliver the module. The delivery includes the morning lectures, where the role is one of information provider, and then to oversee the afternoon activity acting more in the role of facilitator.

Some of the morning sessions are run by guest lecturers with more expertise in certain areas e.g. IP issues.

### **Links with outside agencies and employers**

- Engineering Subject Centre
- Coventry University Enterprise run in Coventry's Techno centre which acts to encourage and provide funding for new start-ups.
- Mercia Institute – a consortium of 12 West Midlands Universities involved in the teaching of Entrepreneurship.

### **How is the module assessed?**

The intended learning outcomes will be assessed as follows:

100% Coursework comprising an end-of-module written assignment - an entrepreneurial company case study analysis.

### **Issues and barriers**

One of the biggest issues for the lecturer has been the feeling of isolation and a lone voice within the School – but the culture is slowly changing.

There have also been some issues with the Business School regarding the development of these programmes by the School of Engineering.

### **What evidence can be provided to show if the module was a success?**

The modules have received positive feed back from the external examiners and will be monitored for student feed back, but it is too early for feedback to date.

## **Reflections and future developments**

Future plans are to try and get a grant to develop an e-learning simulation game to be integrated into the module. Whilst there are a lot on the market most again revolve around the business side of entrepreneurship and it is felt that it would be more appropriate to develop a simulation that encouraged innovation and 'out of the box' thinking.

Coventry's overall institutional vision for entrepreneurship teaching within the University is changing. It is hoped that it will no longer be seen as something which is to be 'owned' by anyone School, but more as something that is to be embedded in courses throughout the University as a whole. With this end in mind a group of champions (one from each of the six Schools) has been drawn together to attempt to tackle this problem. In addition, the Careers Unit and the Students' Union are represented in this group.

Since writing the case study, the University has implemented some new strategies regarding Enterprise and Entrepreneurship. One of the first major initiatives has been to employ a Business and Development Manager for Enterprise and Entrepreneurship (students) whose role is to ensure that all Coventry University students have some exposure to Enterprise and Entrepreneurship training. In addition, funding has been approved and planning permission obtained for a new Enterprise Centre. This will give students solid support for Enterprise activities and encourage them to think of Entrepreneurship as an achievable career choice. These developments illustrate that the teaching of Enterprise and Entrepreneurship is moving forward rapidly at Coventry University.