

## **The Northumbria University experience ...**

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This report is for the CPHC Learning Development Group. It is a snapshot of how enterprise has been integrated into the computing curriculum within the Faculty of Engineering and Environment at Northumbria University.

### **In what module(s) does this material reside?**

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We currently deliver 2 x 20-credit year-long modules to computing students at undergraduate level: “Entrepreneurship & Creativity” (E&C) at level 5 (2<sup>nd</sup> year); and, “Graduate Enterprise” (GE) at level 6 (final year). We have developed a natural progression between these modules, but also designed so that students can study each module without needing any pre-requisites.

We have also have developed a 20-credit semester-only postgraduate level module “Technology Entrepreneurship” (TE), however, this is currently only delivered to Engineering students only at this time.

E&C is aimed at developing the skills and underpinning knowledge of business processes, developing an individual idea to a proof of concept business plan. The students come from a mix of computing and engineering programmes.

GE enables students to bring a business idea to life, commercialise, and develop experience of actually running a business for real in a group/business team. This module is offered right across the University, which brings a mix of students from computing and engineering disciplines, but also from areas such as fashion, sport, and business. This brings a broad range of skills and experience to the module. At team formation stage, we encourage teams to become cross-disciplinary.

### **Are these module(s) required in your curriculum?**

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Both modules are currently offered as both core and optional, depending on the structural constraints of the programmes of study.

### **Are there any other explicit links with other elements in the curriculum? (Groupwork? Social & Professional issues?)**

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The content and delivery of both modules enable students to apply the knowledge and skills that the students are learning in other modules. Whilst professional, legal, and ethical issues are highlighted in other modules, our entrepreneurial modules bring them to life in an applied, and experiential way.

### **Is this material taught by your own staff, or outsourced? If outsourced, to whom?**

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Both modules are taught by internal staff. However, we do bring in many guest speakers from industry to talk about issues such as legal, IP, marketing, franchising, finance, e-commerce.

The GE module also involves other external stakeholders such as Young Enterprise, and local SME entrepreneurs who help mentor the business teams with their business activities.

## How do you assess this work?

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C&E assessment strategy involves 3 components. At the end of semester 1, all students are required to pitch their ideas to staff “Dragons Den” style, whilst conveying their ideas visually via an A1 poster. We invite industry experts to cross-examine the students. A business plan is handed in at the end of Semester 2, along with a reflective piece of work evaluating their individual learning / knowledge / skills, and critically evaluating their own business plan. All the way through the year, students are encouraged to keep a diary of their learning and reflective thoughts. Students are required to submit a formative piece of reflective work, and also complete a multi-choice test, at key points during the academic year.

GE assessment strategy also has 3 components. A summatively assessed team business plan is required by week 9 of semester 1, followed by formative pitching/presentation of their ideas. At the end of the year, students then report their company findings via presentation. The final piece of assessment is a reflective review of their entrepreneurial journey, accompanied by a portfolio of evidence. Again, students are encouraged to keep a diary of the learning throughout the academic year.

### *Steve Ball*

Senior Lecturer (Business Information Systems)  
Northumbria University  
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For initial findings of the impact the C&E module has made upon the students, we've published the following paper:

**Vij, V., Ball, S. (2010)** *Exploring the impact of entrepreneurship education on university non-business undergraduates*. International Journal of Entrepreneurship and Small Business. Vol.9, No.1. Inderscience Enterprises Ltd.