

‘Industrial Case Studies’ Module for Undergraduate BEng/MEng Materials Engineering Students

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People from industry deliver industrial case studies on specific topics to 42 undergraduate materials engineering students in their final year.

Reasons for engagement

Industrial Case Studies is a relatively new module (around four years) which has six lecture slots where people from industry deliver talks to the students relating to a specific topic.

Noreen was keen to have people from industry deliver case studies about real issues that affect industry and have the assessment for the module related to the industrial case studies. Noreen used the contacts that people in the department have to ask industrialists if they would like to deliver a case study to the students. All of the industrialists currently involved have a link with the department.

Having worked in industry Noreen appreciated how important it is to give the students as much exposure to people from industry as possible.

The engagement

Initially most of the people who delivered case studies were retired industrialists but more recently they have been people who currently work in industry. The industrialists include those who work for a large power generation company, a medium sized motor vehicle research company and a small composites company.

All of the companies are within relatively close proximity to Loughborough.

The industrialists each deliver their case study during a three hour lecture slot over a six week period. There were 38 students who were in the final year of their BEng degree and two students in the final year of their MEng degree. The industrialists deliver lectures related to a wide variety of topics including packaging materials, polymer composites, metals and specific to the company e.g. *materials in power generation and failure analysis of automotive components*.

At the end of each lecture, the industrialist will provide a question, problem or topic as an assignment for the students to complete as part of the coursework assessment for the module. Each assignment requires an answer of about 1000 words. Students must complete four assignments in total.

Issues

It can be difficult to find the right people to deliver the lectures, all of the current industrialists have a link with the department. Many of the industrialists are previous graduates or Masters students who studied at Loughborough, one studied for his MSc around 25 years

ago! One of the industrialists is a graduate and former PhD student who now works for a power generation company.

The industrialists mark the assignments completed by the students and for some who are not familiar with this process it can initially be difficult for them. Noreen has delivered tutorials for the industrialists to support them with the marking criteria and has looked at scripts where necessary. The assignments are usually set between Noreen and the industrialists.

There is a risk in involving industrialists in teaching part of a module as people from industry can sometimes let you down due to commercial pressures. Also there may be travel delays, particularly if they are coming a long distance. "Sometimes I feel as if I'm not in control. At present I only involve people who already have contact with the department and are fairly local."

Benefits

"All of the lectures delivered by the industrialists are good and the technical content is very good. The students get a lot from it, one student told me that a particular talk given by an industrialist was the best lecture he had been to in his four years at University."

The industrialists are keen to work with the students and sometimes gain new ideas from them. The industrialists want to put something back in to education as they feel they have got much from their experience.

"It is good for people from industry to have contact with people in universities, exchange ideas with academics, try ideas out and talk something through."

Reflections

The module is a great experience for the students because they can relate their academic theory to a real issue in industry. The presentations given by the industrialists are professional and often the industrialists are looking for answers to real problems.

Context

Noreen Thomas is a Senior Lecturer in the Department of Materials at Loughborough University. Noreen previously worked at ICI's technical centre at The Heath in Runcorn, Cheshire and in 1990 joined the research department of European Vinyls Corporation (now INEOS ChlorVinyls) as a Project Leader, developing new applications for PVC and providing technical support for customers.