Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Building a Mathematical Foundation for Engineers

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The Problem

Service teaching in mathematics, in Engineering for example, faces a couple of major challenges such as:

1. Retention of knowledge — students forget the information after only a few months.
2. Transfer of knowledge — students may know the techniques but not how to translate it into the context of their discipline.

Our Goal

We wish to create a Blackboard content area for each first-year service module with examples of how material gets applied in future modules. This will hopefully:

1. Highlight the importance of mathematics for students to encourage retention for future use.
2. Show how the concepts they study can be transferred into their discipline within relevant contexts.

The content area will be ready in advance of Michaelmas term for incoming students to try it out.

Our Solution

We began with MAU11E01: Engineering Mathematics I.

After examining the engineering curriculum, we:

1. Contacted lecturers in the School of Engineering.
2. Collated online resources highlighting applications.
3. Found examples of how the mathematics is applied in future modules, such as exam questions.

4. Created an interactive flowchart which shows how the mathematics weaves through the course.