

Case Study M: Developing a Cost-Neutral Tracker of Student Workload Distribution

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Module discipline: Biomedical Engineering
Approximate module size: 200 - 250 students
Level of module: All 4 Undergraduate years

Reasons for using analytics in the module

As programme director for the BE degree in Biomedical Engineering I arrange a feedback meeting every semester with the Biomedical Engineering Class Representatives (from all four years of our programme). The purpose of the meeting is for the Class Representatives to alert staff to general issues relating to the programme that affect a significant number of students. It is not a forum for Class Representatives to express personal opinions; rather they are asked to meet with colleagues one week before the meeting and to compile a list of issues that are of general relevance. (It should be noted that we also have a number of additional feedback mechanisms (e.g. anonymous online module surveys) where all students can individually express personal opinions and provide individual feedback).

A recurring complaint every semester was that setting of deadlines for submission of lab report and continuous assessment material was not coordinated at an inter-module level. This commonly resulted in the following issues:

- Students are faced with several simultaneous deadlines;
- Lab report deadlines tend to cluster towards the end of semester. This is particularly problematic in Semester II of 4th year, with the submission deadline for the capstone Final Year Project being set for the final day of the semester.

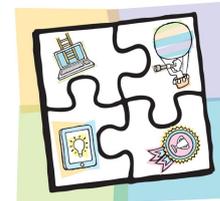
In our programme every 5 ECTS module is carefully designed to require 100-120 hours of student effort (including lectures, labs, tutorials, report preparation and exam study). However, if several deadlines for deliverables (lab reports, tutorial problem sheets, design calculations) occur simultaneously students will simply not be able to dedicate the require number of hours to each module.

As Programme Director I set out to develop a solution to this problem in the 2014-2015 academic year.

Data sources/modelling approach

The following steps were taken in order to devise a simple efficient and cost-neutral solution to achieve a uniform distribution and optimisation of student effort throughout an entire semester (see next page for sample end-result):

1. Before the beginning of semester create a table (e.g. as a spreadsheet in Excel) with 12 columns for each week of the semester, and 1 row per module delivered in the semester.
2. Provide access to the table to all module owners/lecturers using a shared folder (e.g. dropbox).



Case Studies of Data Use in Module Design/Delivery

3. Request that all module owners/lecturers populate the table with proposed deadlines for each item of continuous assessment to be submitted during the semester.
4. Identify weeks where more than one submission deadline is scheduled. Contact individual lecturers to explore possible modification of simultaneous submission deadlines.
5. Discourage setting of deadlines within two weeks of major capstone Final Year Project submission at end of semester.
6. Finalise submission deadline table and distribute to students before the first day of semester.
7. The table must be updated and all lecturers alerted if any modifications to module submission deadlines occur during semester.

4BG Semester 4th year II biomedical													
Week starting	12-Jan	19-Jan	26-Jan	02-Feb	09-Feb	16-Feb	23-Feb	02-Mar	09-Mar	16-Mar	23-Mar	13-Apr	
Week #	1	2	3	4	5	6	7	8	9	10	11	12	
BME403 L. McNamara		Bioreactor project- Assigned 19 Jan					In class presentations Monday 23rd Feb		Bioreactor project- Submission Fri 13th Mar				
SU404 P. McGarry				Theatre visit report	Cardiology MCQ	Vascular Innovation project presentation		Vascular Innovation project report	1 Week Extension for Vascular Innovation project report				
ME429 R. Barrett			Lab Report										
Final Year Project All Staff	Interim Presentations									FYP Draft Due Fri 20th March		FYP Report submission 17th April	

Figure 1: Example of a finalised table that facilitates coordination of module deadlines

Impact of using data

This simple mechanism for exchange of data between module owners/lecturers resulted in a significant enhancement in student performance and student satisfaction levels.