

Online Assessment of level 2 Engineering Maths

Level 2 Maths for the Certificate in Engineering is a unit standard based course delivered at OP. The students have a wide range of abilities from needing intense one-on-one tutoring to about a quarter of the students who need minimal assistance. Class size is typically around 16 students.

Traditional teaching from the front of the classroom is not optimal for these students; rather it was decided to

- cut teaching to short bursts,
- allow students to work independently online (due to the range in ability) and
- give one-on-one teaching to weaker students.

We developed a Moodle based assessment with randomised questions split into quizzes taking the average student 1–6 hours to complete. Students are allowed multiple attempts. A quiz generally starts with a short lesson (5–15 minutes) then students are free to attempt the quiz. Students who finish early are free to leave and, depending on the time allocated to the quiz, miss the following week's classes. The remaining students fall into two groups: those who prefer to work cooperatively and a small number (usually 2–3) who require one-on-one attention.

The final phase was the development of a tool to process the results. Moodle results are output as an Excel spreadsheet for each quiz. Visual basic routines in Excel analyse the results and determine, for each student, which Evidence Requirement of each learning outcome has been achieved. The key to processing is the *Correlation Table*, a sheet in the spreadsheet that

- maps Evidence Requirements to quiz questions with specific weightings,
- indicates to students appropriate questions to achieve individual evidence requirements and
- provides moderation information.

The format proved successful: students are typically highly motivated work on their quizzes and the time required to cover the material has been greatly reduced.