



Electronic mid-term exams

Faculty: Engineering

Department: Electrical and Electronic Engineering

Module name: Assessments across different modules in EEE with specific references to Communications module

Degree: Across EEE programmes

Level: Across Y1 and Y2 undergraduate courses

Approximate number of students: 100-200

Duration: approx. 50 minutes

Weighting and credit: 10%-20% of the final grade (usually 10% in Year 1, 20% in Year 2)

Module ECTS: Variable

Assessment overview

This is a flexible, learning focused quiz-based mathematics assessment for Mid-term exams are designed as low stake assessments with more of a formative function delivered in the middle of the module (usually 6 weeks into the term) with the main aim of checking students' progress and offering appropriate support for future learning. The exams usually consist of between 1 and 15 questions and are delivered and marked electronically via Wiseflow software.

Design decisions

What was the rationale for introducing a mid-term exam?

Mid-term exams were introduced to offer more distributed, lower stake interim assessment points allowing the lecturers and students to formally monitor learning and progress more closely and spread the assessment load for both staff and students. This encouraged student engagement with the material throughout the term (as opposed to the previous tendency to shift study to final exam revision) and provided mid-term feedback to both staff and students, while there is still time to learn and improve for end of term assessment.

Rationale for the assessment type

In order for those assessments to fulfil the role that the teams wanted them to play, i.e. monitor progress and offer feedback that can support learning, those needed to be marked fast. Electronic marking and feedback helped to facilitate that.

Rationale for the software

Flexibility in the type of questions that can be used which means that usual questions can easily be translated into an electronic form and real time progress monitoring were the two reasons why we chose WiseFlow. In terms of monitoring, throughout the duration of the exam you can see how much time students are taking on each question, what percentage finished the test at what point in time which helps with identifying students needing support. The software also allows us to customise questions for students through reshuffling the order in which they appear as well as amending the values that students work with, which helps to stop collusion.

Questions design

The software allows a variety of questions including MCQs, 'fill in the blank' (numerical), free text answers for mathematical expressions, fill in the table etc.

The questions tend to focus on testing knowledge and the theory part of the course with some questions around application. For us theoretical questions can be related to analysis or design, but whatever they are, they are essentially maths questions.



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Automated answers design

Ensuring that all allowed variations of an answer are entered into the system is important. We test each question on GTAs who are asked to do those questions as students. This allows us to see if any types of mistakes come up with certain answers hence allows for better quality assurance of the exam.

Fit with other assessments on the programme/module

The mid-term exam is an additional assessment method introduced as a diagnostic/ formative tool but carrying sufficient amount of credit to ensure students approach it with diligence. It is designed to monitor progress on the theoretical aspects of the module that provide underpinning for the more practical aspects assessed in the labs and higher order skills tested in the end of term exam.

Mid-term exams have been introduced across the majority of year groups so there is an element of continuation as the students' progress through their studies.

Practicalities

Student preparation

after each of the topics commences.

We do a lot of mock tests (one mock test before every mid-term) to help students get used to the software and practice types of questions they might be asked. The first mock is mandatory to ensure that every student has some practice.

Marking arrangements

The marking is set to be done automatically by the software but descriptive types of questions if used need to be marked manually. In case of mistakes in answers those need to be adjusted manually for each student.

Feedback arrangements

Students receive a PDF file with all of their answers. For some questions all they get is an indication of an answer being correct or not, in some cases the students get an indication of a range – saying that the answer would have been correct if it fell within this range and for more complex or problematic questions they might get a line or two of explanation.

The results of the midterm exam and the mid-term feedback are sometimes discussed in problem classes and in meetings with personal tutors.

Management of the process

Successful implementation across the department requires one person, a digital lead, overseeing the process, i.e. liaising with staff about appropriate question types, inputting the questions and managing potential appeals and adjustments to automatic marking.