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Using e-Assessment to assess and support learning for Engineers

Day 1 – Parallel II (15.05-15.35)

We will report on the different ways that we have used the DEWIS algorithmic e-Assessment system to assess and support learning across the first year Engineering modules at the University of the West of England, Bristol (UWE).

Following a curriculum refresh exercise in 2011/12, the first year Mechanical Engineering programme at UWE was streamlined to comprise three 30 credit modules and two 15 credit modules. Student numbers on this award have increased substantially over the past years, partly due to the success of the Bloodhound project. To enhance the student and staff experience all three 30 credit modules, namely Engineering Mathematics, Stress & Dynamics and Design Materials & Manufacturing use e-Assessment for summative and formative purposes.

In Engineering Mathematics students are given six small e-Assessments throughout the year, which typically each contain 12-15 short mathematical questions. These are open in practice mode for at least a month prior to the summative e-Assessment going live and students are encouraged to practice questions as soon as the material has been covered. A few hours before each e-Assessment is due to go live the relevant practice test is switched off and students are given 2 attempts over an 11 day period to attempt the test. Students may access their mark and full feedback immediately after submission and their highest mark counts. All 6 tests are re-opened for one further attempt at the end of the year.

In Stress & Dynamics students are given two e-Assessments. The first takes the form of a large compound question based on laboratory work. Each student receives an individual assignment via the DEWIS system, a month prior to the assessment deadline. At this stage they may view the assignment, but submission is disabled, that is they cannot submit any answers. Students are expected to work on the problem during laboratory sessions and in their own time. A week before the assessment deadline the Submission version is enabled and students have one chance to submit their answers. Although DEWIS marks automatically at the point of submission, releasing their mark and feedback is delayed until after the assessment deadline. The second e-Assessment comprises a series of shorter questions.

In Design, Materials & Manufacturing students are again given two e-Assessments, one in each Semester. Both contain several shorter questions based on tutorial questions covered in the module. Due to some of the questions not containing a great deal of randomness, students receive their overall mark only on submission. Feedback and a full breakdown of each attempt is made available to all students after the submission deadline.

All e-Assessments, except the laboratory-based test, were also run at a partner FE college. The e-Assessments were opened up in practice mode close at the end of the second semester for students to use as a revision aid. Module evaluations have shown that this approach is very popular with students.

For further details of the DEWIS system, please see: http://www.cems.uwe.ac.uk/caa