Numbas at FVC

Our experience of using Numbas

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Using Numbas at FVC

Why we used Numbas to assess

How we have implemented it at FVC

How we are going to use Numbas to assess in the future

Why we started assessing using Numbas

Used it as a formative assessment tool since 2014

Unable to do traditional paper assessment during pandemic

Needed to ensure assessments met SQA regulations:

    were valid, reliable equitable and fair

    ensured the candidates own work

Benefits of using Numbas

Ensures candidates' own work

Maintains integrity of assessment

Allows performance criteria to be sampled in line with SQA regulations

Ensures robustness of assessment because of randomisation

Provides instant feedback to students

Unit title: Engineering Mathematics 2 (SCQF level 7)

Evidence Requirements for this Unit

A sampling approach will be used in the assessment of the Knowledge and/or Skills in this Unit. Learners will need to provide written and/or recorded oral evidence to demonstrate their Knowledge and/or Skills across all Outcomes by showing that they can:

Outcome 1

Provide evidence of **three out of the five** Knowledge and/or Skills in this Outcome. The following evidence should be provided for the particular Knowledge and/or Skill items sampled:

- Evaluate any two of the following trigonometric functions: $\sec\alpha,\ \operatorname{cosec}\alpha,$ or $\cot\alpha$ for a given value (s) of α
- Solve one problem using one of the following compound angle formulae $\sin(x\pm\beta)$ or $\cos(x\pm\beta)$
- Solve one problem using one or more of the following trigonometric identities

$$\sin^2\alpha + \cos^2\alpha = 1$$
$$\sin 2\alpha = 2\sin\alpha\cos\alpha$$
$$\cos 2\alpha = 2\cos^2\alpha - 1$$
$$\cos 2\alpha = \cos^2\alpha - \sin^2\alpha$$

- Evaluate any two of the following hyperbolic functions: $\sinh\alpha,\ \cosh\alpha$ or $\tanh\alpha$ for a given value (s) of α
- Solve one problem involving hyperbolic identities

Implementation at FVC

Use Moodle as our VLE (https://moodle.org)

Create 5 Numbas exams per outcome

Feedback from staff and students has been very positive

Future use of Numbas at FVC

Post pandemic majority classes will return to campus 2022-2023

Will use a hybrid form of doing assessments:

Returning to invigilated, closed book assessments

Using Numbas to generate the assessments

Redesigning the marks allocated to assessments to be in line with the traditional approach to assessing

Candidates doing their working on a booklet provided and inputting their answers into the Numbas assessment

A candidate could pass solely on the Numbas assessment but in the event they don't achieve enough to pass, their script could be marked against a generic marking scheme to see if they would get enough marks from their working to pass

Thank you