

**Example of a large, scalable technical foundations course**

Context: Core engineering science course, students assessed individually. This example is based on a course taught in the flipped classroom style. The predominant form of assessment is midterms and final exam. Students have weekly homework (for credit). The main assessments in a traditional in-person exam allow four typeset pages of formulae so closed book is not practical for online assessment.

<b>Assessments</b>	<b>Purpose*</b>	<b>Weight</b>
<b>Weekly preparatory quizzes (12):</b> Weekly auto-graded questions in LMS or via WeBWork to maintain progress	F, L, M	5
<b>Weekly Homework (12):</b> Weekly assignments using WeBWork. Each student is assigned different variables for the same problems set. Auto-graded. Collaboration is permitted. Best 10 of 12 scores counted.	F, L, M, E	15
<b>Midterms (2):</b> Long answer calculation-based questions. Unproctored, open resource, work uploaded and manually graded. Questions delivered via LMS quizzing tool. Question banks used to create multiple versions of each question with subtle variations, randomized variables also used (i.e. 2 sources of variation in each question).	F, L, E	40
<b>No-harm post-midterm bonus quizzes (2):</b> Available after each midterm. Long answer calculation-based question, autograded. Unproctored, open resource, time limited. Students upload written work as proof of individual effort but not otherwise graded. If student performs better on this quiz, midterm reduced to 15% of final grade and this quiz worth 5%, otherwise no change.	F, L, M	-
<b>Exam wrappers (2):</b> Survey completion after each midterm to promote student <b>self-reflection</b>	F, M	5

<p><b>Final exam:</b> Long answer calculation-based questions. Unproctored, open resource, time limited, work uploaded and manually graded. Questions delivered via LMS quizzing tool. Question banks used to create multiple versions of each question with subtle variations, randomized variables also used (i.e. 2 sources of variation in each question).</p>	L, E	35
<p>*Purpose: <b>F</b>eedback, <b>L</b>earning, <b>E</b>valuation, <b>M</b>otivation</p>		