

Automatic Grading on Paper

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Tutorials Situation: Two Mechanics Courses

- 180 to 200 students

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- 180 to 200 students
- Multiple venues
- Student:Tutor ratio 40:1 up to 60:1
- 58% of student felt tutorials most important

Possible Improvements

- Signed tutorial attendance

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- Tutor marked tutorial tests

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- Signed tutorial attendance
- Tutor marked tutorial tests
- Multiple Choice Questions (MCQ) automatically graded

Tutor Marked Tutor Tests

- Marking differences

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- Large amount of tutor time

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- Only one question marked

Tutor Marked Tutor Tests

- Marking differences
- Large amount of tutor time
- Only one question marked
- 72% of students preferred MCQ

Auto Multiple Choice

- Website <http://auto-multiple-choice.net/>

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- Website <http://auto-multiple-choice.net/>
- Open source software

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- Generates Question and Answer Sheets

Auto Multiple Choice

- Website <http://auto-multiple-choice.net/>
- Open source software
- Generates Question and Answer Sheets
- Automatically Grades Answer Sheets

AMC Example



+1/1/60+

MEC2025F: Mechanics of Solids I

Test 3 4 April 2017 10 marks 25 minutes

Please print your Name, Surname, Student Number and PeopleSoft ID below:

Name:	_____
Surname:	_____
Student No.:	_____
PeopleSoft ID:	_____

Please mark your PeopleSoft ID in the blocks →

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Question 1 If an element is orientated 25° anti-clockwise, from position shown below, what angle can be used to calculate the normal stress on the rotated plane CB using the stress transformation equations? [1 mark]



- -65°
- -25°
- 65°
- 25°
- -50°
- 50°

Question 2 If plotting Mohr's Circle, relative to the centre of the circle, where would σ_x be plotted? [1 mark]



- directly below centre
- bottom left
- top left
- directly above centre
- bottom right
- top right

Question 3 Which of the following statements regarding stress transformations is **not** true? [1 mark]

- Helps us determine the maximum stress direction and magnitude in a structure
- Determined by converting stresses to forces and summing them in various directions.



+2/1/58+

MEC2025F: Mechanics of Solids I

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Question 1 If an element is orientated 25° anti-clockwise, from position shown below, what angle can be used to calculate the normal stress on the rotated plane CB using the stress transformation equations? [1 mark]



- -50°
- 50°
- 25°
- 65°
- -65°
- -25°

Question 2 Which of the following stress elements have all the stresses in a negative direction? [1 mark]



Figure: Excerpts of two papers from a single test

Time Spent

- Initial time 10 hours

Time Spent

- Initial time 10 hours
- Four hours per new test

Time Spent

- Initial time 10 hours
- Four hours per new test
- One hour scanning and marking

Some Numbers

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- Average of question not tested was 18% compared to 64% exam average

Thanks

- Dylan Reynolds

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- CILT Teaching with Technology Grant

Questions???