



MICRO-LECTURES WITH EMBEDDED QUIZZES: AN INNOVATIVE USE OF LECTURE CAPTURE TECHNOLOGY

22ND JUNE 2018

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- Introduction
- Micro-Lectures with Embedded Quizzes
 - Structure
 - Example
- Lucía's Experience and Student Feedback
 - Research Assistant at Solent
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- Results
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- Conclusions
- ***Acknowledgement: The support and SEED funding awarded by the Solent Learning and Teaching Institute (SLTI) is greatly appreciated, and made this investigation possible.***



- Promoting student engagement through technology enhanced learning
- Micro-Lectures
 - Short, sharp vodcasts covering the essential concepts
- Embedded Quizzes
 - Promote student engagement and a more active learning experience
 - But also provide feedback on student's understanding of particular concepts
- Time-Line:
 - Spring 2017: Pilot study
 - Autumn 2017: Implementation on a 2 weeks short course
 - 2017/2018 Academic Year: Used weekly on a level 4 unit

MICRO LECTURE WITH EMBEDDED QUIZZES

- Micro-Lecture Structure:
 - 3 to 5 minutes long
 - Roughly one quiz per minute to promote active engagement
 - The rest of the video cannot be watched without answering the quiz!
- Results can be monitored
 - Allows to reflect on previous class, and influence the forth coming one

Contents		
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Discussion	Basics of Units	0:19
Notes	Basics of Units	0:23
Bookmarks	In physics there are 7 fundamental units anything...	0:32
	Mass (g)	0:46
	Length (m)	0:50
	<input checked="" type="checkbox"/> Quiz	1:07
	Density, Relative Density and Specific Gravity	1:09
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	<input checked="" type="checkbox"/> Quiz	2:11
	Mass and Weight	2:12
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	Newton's Laws of Motion	2:56
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	<input checked="" type="checkbox"/> Quiz	3:42

Overview

Share

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Quiz Results

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Quiz Results Summary

Section

Quiz

Quiz

Quiz

Quiz

Position

01:07

02:11

02:54

03:42

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Results
11/11 (100%)
11/11 (100%)
11/11 (100%)
4/10 (40%)

ML4 Shear Stress and Strain

Jean-Baptiste R. G. Soupez

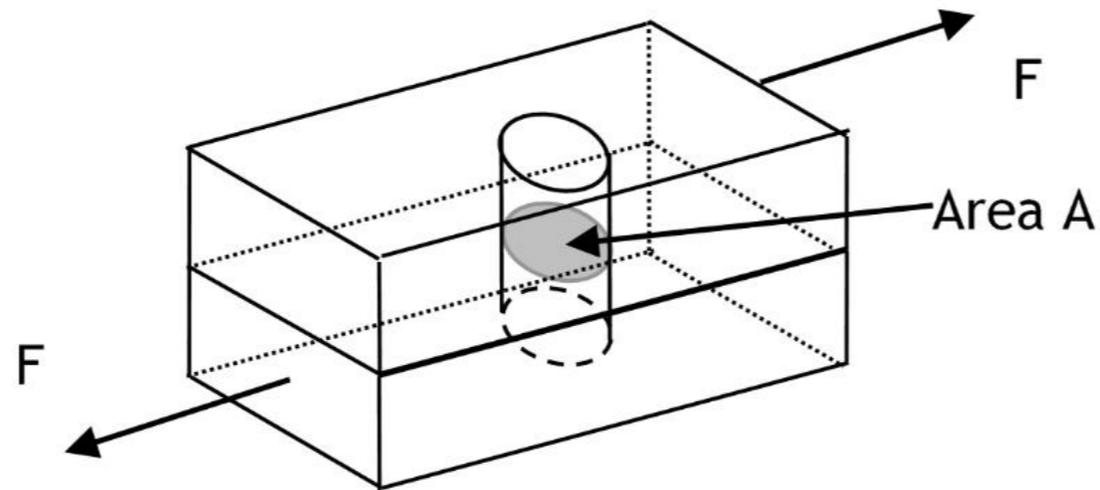
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Direct Stresses and Shear Stresses

- Consider the diagram below where a pin is holding two blocks together, each subject to a shearing force. The pin will need to resist the shear force with the grey area, parallel to the direction of the loading .



M

Jean-
Lectur
jean-ba



Southampton



Southampton
SOLENT
University

Shear Stress

- The shear stress is labelled by the Greek letter *tau*, for which the symbol is τ , and is defined as the ratio of the force over the area:

$$\tau = \frac{F}{A}$$

- Where:
 - τ is the shear stress (MPa).
 - F is the force (N).
 - A is the cross-sectional area parallel to the force (m²).

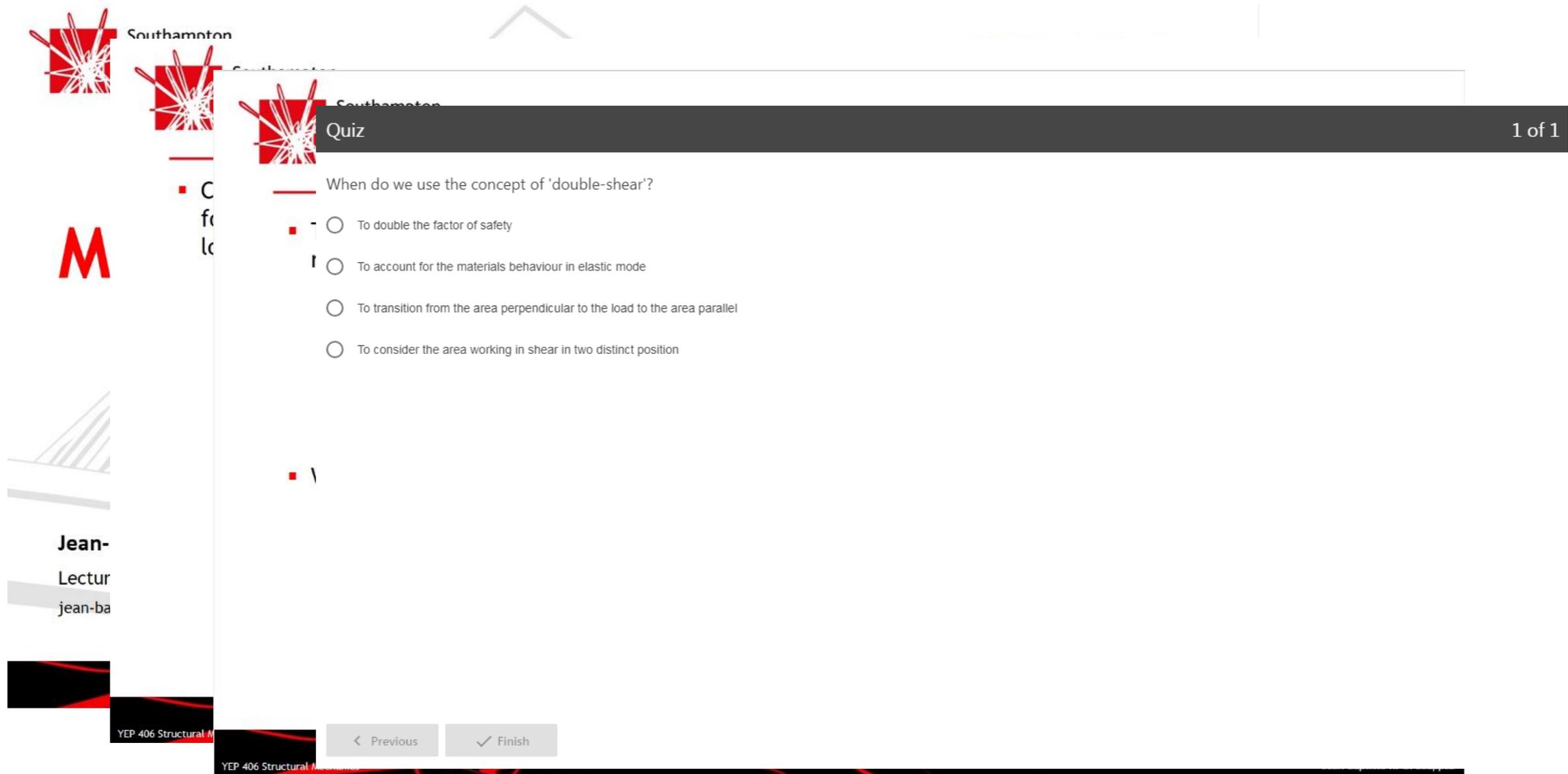
M

Jean-
Lectur
jean-ba

YEP 406 Structural M

YEP 406 Structural Mechanics

Jean-Baptiste R. G. Souppéz



The screenshot shows a quiz interface for 'YEP 406 Structural Mechanics'. The interface includes a navigation bar with the Southampton SOLENT University logo and the text 'Quiz' and '1 of 1'. The main content area displays a question: 'When do we use the concept of 'double-shear'?'. Below the question are four radio button options: 'To double the factor of safety', 'To account for the materials behaviour in elastic mode', 'To transition from the area perpendicular to the load to the area parallel', and 'To consider the area working in shear in two distinct position'. The interface also features a 'Previous' button and a 'Finish' button at the bottom.

Southampton SOLENT University

Quiz 1 of 1

When do we use the concept of 'double-shear'?

- To double the factor of safety
- To account for the materials behaviour in elastic mode
- To transition from the area perpendicular to the load to the area parallel
- To consider the area working in shear in two distinct position

YEP 406 Structural Mechanics

< Previous Finish

Southampton

Quiz

1 of 1

Quiz Results: Quiz

When do you double-check?

- To doubt
- To accompany
- To transport
- To consolidate

You answered

1 out of 1

questions correctly

What would you like to do now?

Retake Review Continue

YEP 406 Structural M

YEP 406 Structural M

< Previous

- I found this job through Solent Graduate Jobs: <https://graduatejobs.solent.ac.uk>
- It is a part-time job that will allow me to earn some extra money
- I carried out a research under my supervisor's guidance
- I learnt some valuable skills:
 - Analytical Skills
 - Administrative Skills
 - Computer Skills
 - Research / Project Skills
- All of them were really helpful for my Bachelor's and gave me extra points when I applied to job positions
- In the future I could find a job as a Research Assistant at a media company

- We chose to do this using an informal setting
- The focus groups had two parts:
 - A structured questionnaire
 - An open debate where I could take some notes and make observations
- Something that motivated students to participate in these focus groups was the possibility of earning a prize and get some free pizza
- I found that the students were more keen to discuss their thoughts and opinions in an informal chat, rather than writing everything on paper
- It was also a good opportunity for them to give some ideas and suggestions to improve the overall course
- Additionally, the students became aware of the role of a research assistant and some of them showed interest to work next year as researchers

■ Professional

- The students liked the new method of learning through Micro-Lectures
- They gave good feedback on possible ways of improving the lectures
- They were keen to explore new techniques and are eager to work with educational technology
- They liked the research groups and enjoyed sharing their opinions with me

■ Research

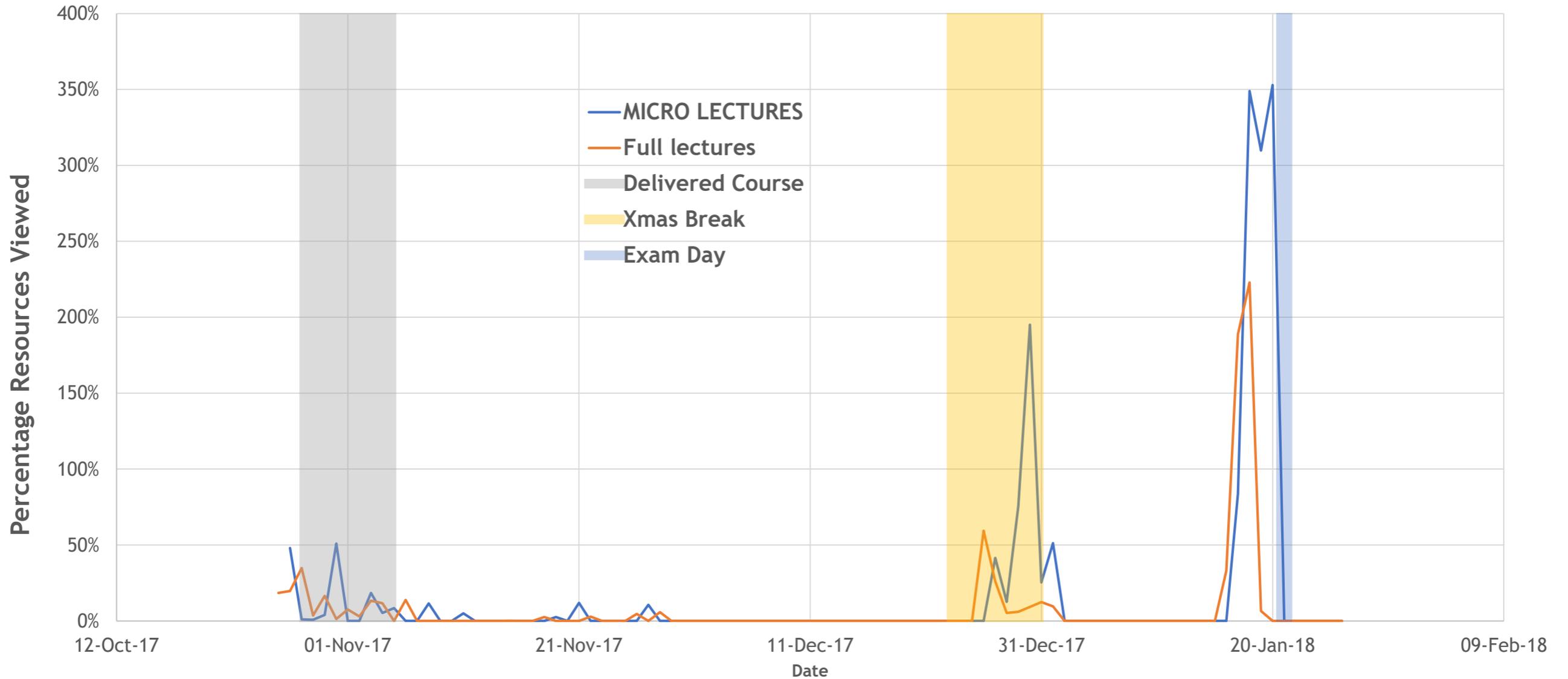
- This should be an ongoing research, since the students benefited from it and it's a good way to promote the University resources
- The structure should be the same for the following years

■ Personal

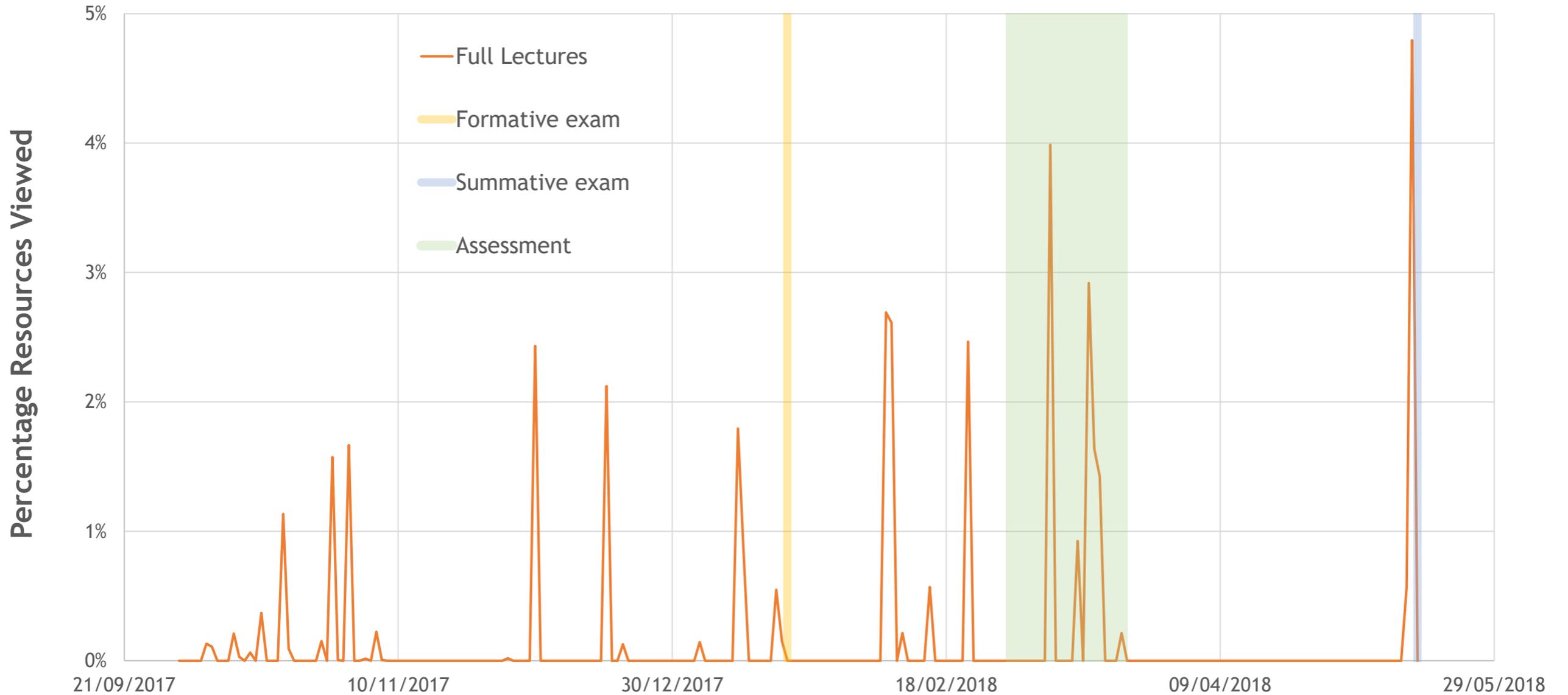
- I really enjoyed taking part of this project
- It was a valuable experience for my future
- I also learnt new things and skills

- One of the main findings of the focus group was the student perception of how they would use the resources.
- The majority of the students stated that:
 - They do not watch full lecture capture if they attended the lecture
 - They do watch the micro-lecture even if they attended the lectures
 - Their use of lecture capture is mostly for revision purposes
- This can then be contrasted with how they actually used it!

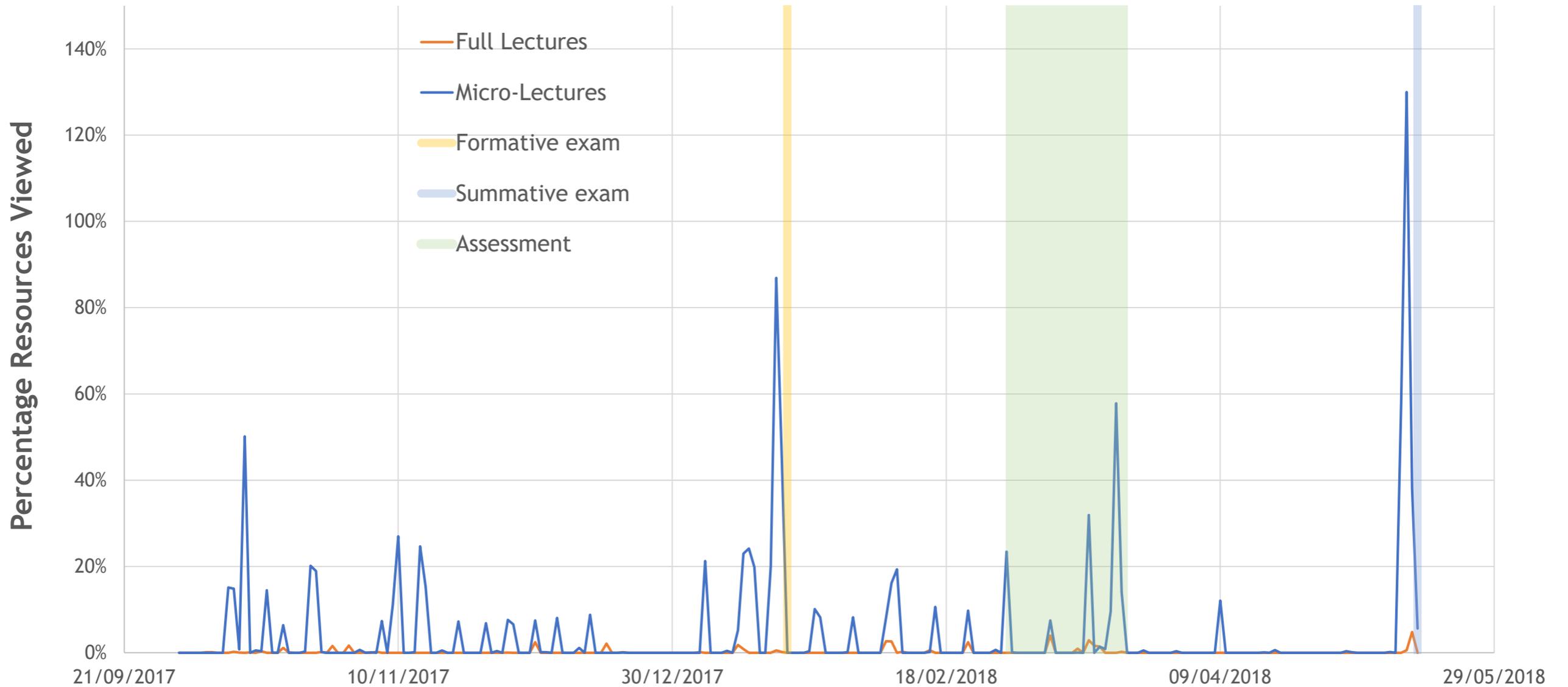
VIEWING PATTERN: SHORT COURSE (LEVEL 7)



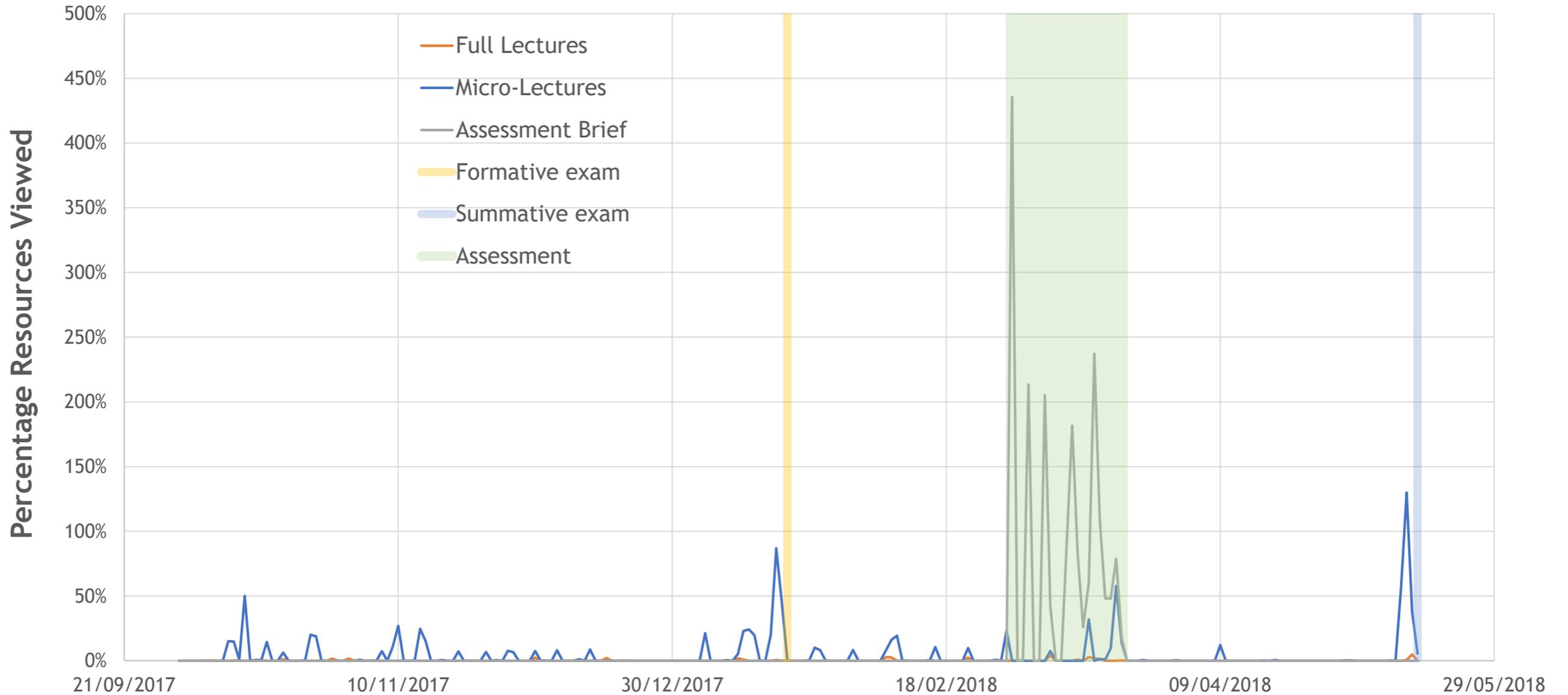
VIEWING PATTERN: YEAR-LONG COURSE (LEVEL 4)



VIEWING PATTERN: YEAR-LONG COURSE (LEVEL 4)



VIEWING PATTERN: YEAR-LONG COURSE (LEVEL 4)



CONCLUSIONS

- Year-long implementation of Micro-Lectures with Embedded Quizzes
- Use of questionnaire and focus groups to assess student perception and refine the Micro-Lectures
 - Very high student satisfaction
- Viewing patterns revealed:
 - The critical under-use of full lecture capture (less than 5% viewed)
 - The much better alternative that micro-lecture represent
 - The greater use of micro-lectures to support exam revision and assessment
- **What's next?**
 - **Get other academics involved (that's you... yes, you!)**
 - **Co-create the micro-lectures with students for a faster and sustainable development**

THANK YOU!



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