

# Bridging for A-level Students

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## Motivation

It is clear that the transition from a student's studying A-levels (or equivalent) to university education can be daunting. And as a programme tutor in physics I was increasingly asked by incoming students about what they should do in preparation for their first year at university. Usually, I said "Just relax! There'll be enough to do soon." This poster outlines what we actually came up with to give them: a collection of questions and brief tutorials from A-level work.



## Structure I

Four topic areas were identified for adoption. The material for each was developed by an upper-year undergraduate student. The style and approach was left entirely up to the student, giving various approaches to the whole learning process. The four main topics were

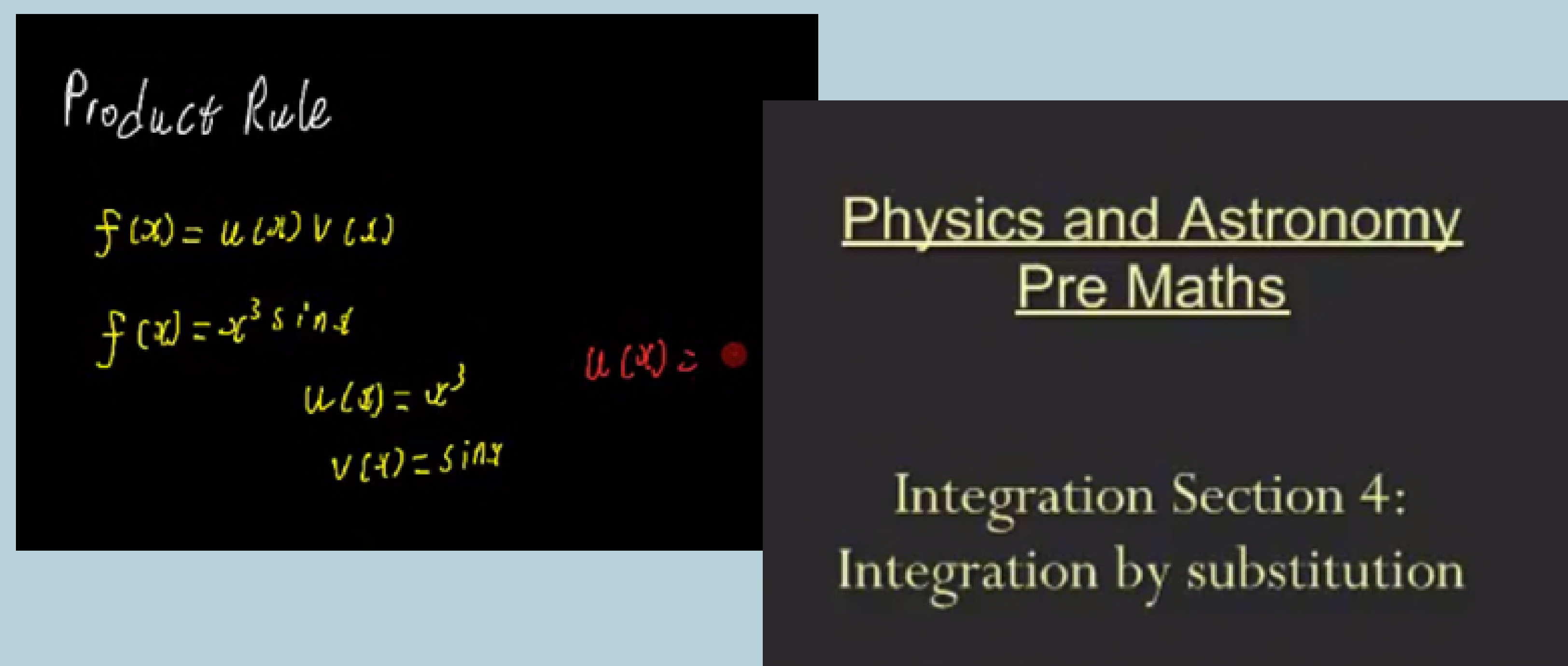
- vectors
- differentiation
- integration
- elementary functions.

Written as an interactive presentation on a Moodle page, this course should remind the student of a few important features of their maths preparations through quizzes and appropriate feedback. Some had instructional videos, some had detailed textual feedback; either way the student received a good idea of what was trying to be put across. Students were ensured that their performance in the quizzes would not count towards their module or degree marks; it was an opportunity for them to test their understanding of basic techniques necessary for the first mathematics course they studied at university. Also, they were encouraged to look at any tutorial material offered in order to understand the maths behind the quiz questions. The students were reminded that they could pause any videos in order to "reflect" on what they were looking at.

## Structure II

The instructional material had simple examples for the students to work through. The quizzes could be attempted at any time, in whole or in part. There were up to 7 sections for each topic, hence up to 7 quizzes. Each quiz was made up of up to 6 questions – there was no need to pick from a test bank or randomize as the quizzes were not summative in any sense. The questions themselves were various types: multiple choice, true/false, and matching. The correct answers and appropriate feedback were given automatically and immediately through Moodle.

The material also referred to sections of the main course's recommended textbook for further information or help, encouraging the student also to try the questions found therein.



The different styles of tutorial videos reflect the different approaches of the student authors

## Engagement

This bridging course has been used since 2013, with continuous tweaking on the fly. On average, 210 students engaged with the page at some level. Typically, 250 students are enrolled on the associated first-year course. They were all enrolled onto the Pre-Maths Moodle Course as soon as they registered for the year – there was no way to allow other "guests" to participate. Many used the pre-maths course as a resource for their first-year course. Indeed, the average grade of the first-year course associated with it increased by 5% after the bridging course's introduction.

Now, with the emergence of the public Moodle eXtend site, the bridging course can be opened to students before they actually enroll, increasing its range and usefulness.

## Feedback

Students were asked to leave feedback on the bridging course's or associated module's Fora or send it in by email. Most correspondence pointed out errors in the text or quizzes, making the students feel good that they could catch them. Any comments about the course itself were positive, and appreciative of the opportunity. A typical response was:

"The information in the video presentations was very helpful and certainly makes solving problems much easier. The quizzes are for the most part .... Anyway, despite the occasional errors and/or unknown terms this has been a great bridging course and has allowed me to get familiar with the differences in notation. Therefore thank you for providing the course."

As the course is a work in progress, the feedback from the students informed the subsequent iterations of the course to make it better, so its present form and content is quite a distance from the original.

## Conclusions

A MATH'S BRIDGING COURSE HAS PROVEN EFFECTIVE FOR, AND WELCOMED BY, INCOMING STUDENTS TO GAUGE AND FIRM UP THEIR MATH'S LEVELS. IN THESE NEW CHALLENGING TIMES IT CAN ALSO ACT AS A USEFUL TRAINING GROUND FOR NEW LEARNING METHODS.



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