Consultative Committee for Mathematics in the Natural Sciences

DRAFT Minutes of a meeting held on
Monday 17th November 2014 at 3.00 p.m.,
in Meeting Room 10, Centre for Mathematical Sciences, Clarkson Road

Present: Dr Sue Colwell (Convenor), Dr Austen Lamacraft, Dr Mark Spivack, Dr Alex Thom, Mr Oliver Dutton.
Apologies: Professor Ben Allanach , Dr Harvey Reall, Ms Amelia Mitchell.

1. Minutes of previous meeting and matters arising.

The minutes of the previous meeting were agreed.

2. Part IA, A course: Ms Mitchell, who was unable to attend at the last minute, reported by e-mail after the meeting.
Lecture Course: Prof Shellard.

The majority of students are positive about the course and are happy that it covers A-Level material again. As people have done different modules previously there may be occasions when a topic is entirely new (such as the cross product for those who have not done FP3); hence the slower pace is mostly appreciated. A few students, however, have commented that certain parts of the course were covered unnecessarily slowly (eg aspects of normal Maths A-Level such as differentiation) making those lectures a little boring which discouraged a small number of students from attending them.

Those students who have not done Further Maths feel the course is pitched too high. One said that they were finding the pace quite fast and that "a lot of concepts were glossed over, e.g. the use of the determinant". They also commented that when the lecturer says 'given equations ... we can see that' it isn't always clear how the equations prove the result. Some people have suggested that there should be a greater emphasis on the importance of Further Maths when applying / before arriving at the university. The above student said that if they'd have been told about this in the summer then they "could have read-up and done some pre-work". The student rep thinks this would be a good idea. A-Level text books tend to be very good at explaining new concepts so suggesting that people read over certain areas (such as vectors, hyperbolic functions, complex numbers and matrices) would be a great help to those who didn't do Further Maths.

The Convenor would have responded that, whilst undoubtedly helpful, Further Maths A level is definitely not necessary for the A course, and the knowledge assumed by the lecturer should all be covered by the single Maths A level. There is already quite a bit of advice on the department website for offer holders, including links to some specially written NRICH activities. Students should also have attempted the introductory Workbook, to which their Colleges should have sent them the link, and hence been given a pointer to the level of knowledge required.

The overall opinion of the question sheets is positive; they give a good variety of question types and help to identify weaknesses. Once again, there are students who find certain parts too easy and trivial, but in general they are glad of the recap.

The handouts also received good feedback as they give comprehensive notes on the lecture content.

3. Part IA, B course: Mr Dutton reported.
Lecture Course: Dr J. Taylor

The lecturer is mostly very good, but the students find that his explanations can be a bit sketchy at times. He gives out a complete handout, the only gaps being for the worked examples, and he then writes everything out in the lectures.

Most of the material is accessible, but some students think that he sometimes goes over the material they find easy too quickly, and then covers the hard stuff too fast. Most students

found Vectors hard, even when they'd done FP3. They also felt that Oo notation was not presented very clearly, and was not well understood.

The examples sheets are mostly doable, but some examples are stretching, for example question M3, (about the number of terms needed in a Taylor series to calculate π to ten decimal places) was completed by very few students. The students would appreciate it if the answer sheets could contain hints for solutions as well as numerical answers.

The attendance was initially very high, and the lectures had to be moved from the Arts School Room A to the Cockroft Lecture Theatre. The attendance has now dropped off a bit, but the room is still about half full.

4. Part IB course*:* Unfortunately the IB representative failed to respond. A new rep will be found for the next meeting.

Lecture course: Dr H. Latter.

Those members of the Committee supervising students on this course commented that it seemed to be going smoothly, and no adverse comments had reached them.

5. Any other business.

There was a discussion about the large numbers attending the B course. The advice circulated is that the A course should be the default one, with about 2/3 of the class attending it and only those who are particularly confident with mathematics doing the B course. Despite this, the number of students initially attending the B course remains obstinately high. The Committee questioned whether students were reluctant to attend the A course because it felt like an admission of failure. The B course rep reported that, in his opinion, the baseline advice given out was good and pitched correctly given the level of the course.

The Physics rep wondered whether anything was gained by giving students a small taste of formal analysis which, in his opinion, they would never need again. Other members of the Committee felt it was still important to introduce students to such ideas. The Physics rep also reported that the A course had not covered Taylor/McLaurin series before they were needed in physics.