

Consultative Committee for Mathematics in the Natural Sciences

*DRAFT Minutes of a meeting held on
Friday 16th May 2014 at 1.15 p.m.,
in Meeting Room 1, Centre for Mathematical Sciences, Clarkson Road*

Present: Professor Ben Allanach , Dr Sue Colwell (Convenor), Dr Austen Lamacraft, Dr Mark Spivack, Dr Alex Thom, Mr Will Grover, Mr Cornelius Roemer.

Apologies: Dr Harvey Reall, Mr Josh Kellie.

1. Minutes of previous meeting and matters arising.

The minutes of the previous meeting were agreed.

2. Part IA, A course: Mr Kellie, who was unable to attend, had reported by e-mail and his comments were discussed by the Committee.

Lecture Course: Dr Jardine-Wright.

The lecturer is very clear in her delivery, but can sometimes come over as a bit sharp or patronising and some do not find her presentation very inspiring.

The notes have a lot of gaps, and contain an abundance of examples. Some people are very positive about this but many feel that there is too much filling in and repetition. As the notes are mostly blank, it is impossible to read ahead, despite being advised to do so by the lecturer. Some students are worried that they might copy down formulae incorrectly and not notice, and they would have found it easier if all the formulae had been printed. (The complete notes are now on CamTools, so this is no longer a problem.)

When solving examples the lecturer often shows a complete solution to a problem, and then goes back, breaks it down into sections and solves it again. The students would prefer she did this in the opposite order, i.e. solved it thoroughly and systematically the first time, and pointed out any short cuts at a later stage. Also, students feel that when solving examples she sometimes writes out formulae unnecessarily, and they feel that time could be better spent exploring other areas of the topic, or on Tripos questions.

One student relayed their supervisor's comments that some of the proofs in the booklet were less than satisfactory. The Committee commented that this course did not require many formal proofs, and that a high level of rigor was not appropriate at this stage.

3. Part IA, B course: Mr Grover reported.

Lecture Course: Dr O'Donnell.

The lecturer starts on time at 9.00. His handout is well structured, and the level is appropriate. Students know what is coming, and so they can read ahead in the notes and other sources. He has a tendency to go off at a tangent – the Tacoma Narrows Bridge features quite a lot – and hence he got behind. He scheduled a catch up lecture, but that just consisted of him filling in the gaps in his notes with no explanation. (Note: the complete notes are now on CamTools.)

The lecturer has done some algebraic examples, and basic numerical ones. Students would have liked questions done in lectures, not just all at end and would also have liked like harder Tripos questions done in lectures. They were told that suffix notation was an extra, and they didn't have to know it, but there have been exam questions that require the use of it so they would have liked examples on suffix notation in lectures.

Sometimes the lecturer gives what seem like unnecessarily complicated explanations for examples, and sometimes he is reluctant to say why he has approached a problem in a particular way. Also some people would like to see him work things out on the spot so you can see him thinking rather than feeling he is just remembering model solutions.

The Examples Sheets are appropriate, and the attendance at lectures is stable.

4. Part IB course: Mr Roemer reported.

Lecture course: Dr Kent.

The notes on Normal Modes and Group Theory are excellent, and have a natural balance of applications and theory. They are not overly proof based and there is a good match between example and proof. The lecturer is very enthusiastic and puts a lot of effort in but does come over as a bit nervous. He gave a demonstration of normal modes, but unfortunately he hadn't considered it carefully enough from the student's perspective and his model was too small for the audience to see the markings clearly.

The notes are very detailed, and do not have gaps. The lecturer displays them on an iPad and points out the parts he wishes to emphasise. As the notes contain a lot of information, it takes him the whole lecture to actually read them out, but the students feel that ideally he would write out the important bits. The Committee asked whether students would be happy if he didn't say everything he had written in the notes, and there was a discussion on the merits and demerits of printed notes.

As usual the students found the section on Representatons rather incomprehensible and formalistic until the end when they could see the applications. There are no examples in the notes. The necessary mass of detail means that the conceptual stuff gets buried. The students would like a few "take home messages" as otherwise they don't remember the material, and they would like some more diverse examples. Dr Thom, the representative from Chemistry, noted that Chemists have met this material already, and it was useful revision for them. Dr Lamacraft, the representative from Physics, confirmed that this particular kind of Representation Theory was not much used in modern physics, although the ideas remained important.

The Examples Sheets contain a lot of questions on Groups, some of which are quite repetitive, but not enough questions on Representation theory. For the Examples Classes the lecturer told the students in advance which questions he was going to cover, and the classes themselves were good and well attended. .

The attendance at lectures has been dropping; some people don't come because the notes are good so they think they can teach themselves, some don't like his presentation, and some don't come because their exams are so close.

5. Any other business.

There was a discussion about books; the IB representative said that although the book by Riley Hobson and Bence was good for most parts of the course it did not have enough on Representation Theory. The IA rep said that most people looked on-line if they felt they needed extra explanations. The Committee emphasised the need to evaluate information found on-line critically, but accepted this was true of information found in some textbooks, or even in lecture notes.

The students are now much happier with the Arts School Room A as a lecture hall. One lecturer has solved the problem with the second projector by using it to project additional material on to the main screen.

The Committee thanked the student representatives for their efforts throughout the year and wished them well in their examinations.