

The Vice-Chancellor
University of Cambridge
The Old Schools
Cambridge
CB2 1TN

2nd July 2013

Dear Vice-Chancellor,

External Examiners Report – Part II and Part III Chemistry (Organic Chemistry)

This was my third year as External Examiner with expertise in the area the organic chemistry and I assumed the role as lead external examiner. In general, the examination process ran smoothly and Dr Keeler and his colleagues did a very good job with reagrd to the preparation of the papers and model answers. As usual, the examination results were presented in an easily digestible format and the various statistical analyses of the examination data were very informative. As in previous years, it was very helpful to be provided with detailed information concerning averages and mark ranges for each question along with the number of candidates who had attempted each question.

Examination Papers and Model Answers

The draft Part II and Part III examination papers were sent to me in mid to late March, which allowed me sufficient time to read through all the material thoroughly and return my comments in good time. The detailed instructions and the formatting of the papers and model answers meant that it was clear what information was required in the answer to each question. The vast majority of question setters had provided very detailed model answers, but regrettably a small minority did not, which made the task of reviewing some of the papers more difficult than it should have been.

The Part II and Part III the papers covered a wide range of topics and the there was a large degree of choice which allowed candidates to play to their strengths – it should be noted that this resulted in a very wide variation in the popularity of individual questions. The balance between questions based on core knowledge and those testing problem-solving skills was generally appropriate. As in previous years, there were discrepancies with regard to the amount of information that individual examiners expected in order for candidates to earn a given number of marks and this is something that needs to be scrutinised carefully by the examinations committee.

The provision of information about who set and checked the question, plus an indication of whether the question involved core material or required additional knowledge and/or the ability to solve an unfamiliar problem, was very helpful.

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WestCHEM Professor and Head of School

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Part II Examination

All four papers had mark ranges that indicated exceptional candidates had been differentiated from the less able ones. The average marks for the Papers 1–3 were very consistent, with mean and median marks falling in the range 65–68%; Paper 4 had a slightly higher mean and median score. The mean and median marks for practical work were closely aligned with those of the examination papers.

1st/2i Border

2i/2ii Border

2ii/3rd Border

Part III Examination

As usual, the examination questions were of a very high standard and covered a wide range of topics across all sub-disciplines in chemistry. The mean marks for the three papers were very similar (within 2%), which is very satisfactory. Candidates were given a very great deal of choice in what they answered and so were able to focus on just a couple of areas of chemistry. Although it is perfectly acceptable for students to have some degree of choice at this stage, the high degree of choice available does result in some questions being answered by very few students and others being answered by virtually all the class. As in the previous two years, candidates had tended to gravitate towards questions dealing with organic chemistry and away from those dealing with theoretical chemistry or more mathematical aspects of physical chemistry. As I have stated in both of my previous reports, I think there is a strong case for structuring the examination papers in such a way that candidates are forced to answer at least some questions in all the major branches of chemistry. In chemistry departments in most other Russell Group universities it is considered undesirable for students to be given the freedom to deselect a major area of chemistry completely. I do hope that this will be discussed further by members of the Department of Chemistry at their Teaching Committee.

Research Project

As in previous years, the average project mark (73.0%) was substantially higher than the aggregate average for the papers (66.9%) and the average mark for the theoretical projects was extremely high (82.4%). It is not unusual for the project mark average to be higher than the written paper averages, but the project mark has the greatest potential for error and is weighted quite heavily, so it can have a distorting effect on the class list. It is clear that very high project marks had been awarded to some candidates whose performance in the examinations was significantly less impressive, thereby boosting their overall performance substantially. This was particularly true in the 1st Class category and at the bottom of the 2i list.

1st/2i Border

All candidates with a mark of greater than 69.5% (candidates 1-32 on the original merit order list) were awarded a 1st Class degree.

2i/2ii Border

Observations and suggestions

Papers

- The provision of detailed model answers is very helpful to the examiners and their preparation is also an important part of the process during the creation of examination questions. The small minority of staff who do not provide adequate model answers should be strongly encouraged to do so.
- This year there were some serious errors in some of the examination questions that I reviewed e.g. in Part II, Paper 2, Q15 and in Part III, Paper 2, Q34. More rigorous checking procedures for papers should be implemented before the papers are sent to the external examiners.
- Some questions gave little information to candidates about what was required to gain high marks e.g. Part II, Paper 4A, Q71. In general, questions should be broken down into several parts so that candidates can see what is required and the relative mark allocation.
- Some questions were of old-fashioned in style and seemed to be asking “Tell me what you know about my lecture course” e.g. Part III, Paper 1A, Q1. There is no problem-solving aspect to questions of this type and candidates don’t have cues/prompts to guide them and give them an idea about how much information is required and of what type (e.g. graphs and diagrams). Given the brevity of such questions, candidates could

be forgiven for thinking that a couple of sentences would suffice whereas the model answer shows that a great deal of information is required to obtain a high mark.

- It is important that questions generally have an element of problem-solving. Although the vast majority of questions did involve problem-solving, some did not.

Marking

- Most of the papers were marked fairly and accurately. However, in about 5-10% of the cases we checked, we found discrepancies in the marks allocated in the answer booklet and the mark written on the front cover. We strongly recommend that markers indicate clearly what marks are being allocated for each part of a given question and that these marks tally with the number written on the front cover of the answer booklet. In addition, we feel it is essential for someone to check that the marker has added the marks correctly.
- In some cases, it was not clear to the external examiners how marks were being allocated. Indicating the marks that have been awarded using a number rather than a tick would be helpful.
- If a question is marked out of 20 or 25, the final marks tally should reflect this. There is no benefit in marking the question out of some arbitrary number and then applying a scaling factor so that the total is given out of 20 or 25 at the end.

Projects

- The potential margin of error in project assessment is high because the marks awarded for thesis presentation or performance in the laboratory are very subjective. It is cause for concern that so many students in the 1st Class and 2i categories benefitted from high project marks combined with a relatively high weighting of the project mark in the final aggregate mark.
- The project marks in theoretical chemistry are substantially higher than those in other branches of the subject. If this happens in future years, consideration should be given to scaling down marks for a sub-discipline if the average greatly exceeds averages for the other areas of chemistry.
- As discussed above, high project marks were awarded to some candidates whose performance in the examinations was substantially weaker. In some cases, candidates with a clear 2i performance based on theory marks were awarded 1st Class degrees and some candidates with a clear 2ii performance based on theory marks were awarded a 2i classification. It is usual for a student to be awarded a project mark that is 5-10% higher than his/her average for the examination papers but in some cases (e.g. candidates) the project mark was 20% higher than the theory mark. Consequently, we recommend that in future the examination board automatically reviews project reports for those candidates who have received a mark exceeding their theory mark by >10% and that those projects be remarked if necessary.

General

- The examination papers are of a high standard and the distribution of marks is impressive with a large proportion (94%) of students gaining a 1st or 2i classification at Part III level.
- We were grateful for the provision of data (averages, numbers of candidates who attempted the questions etc.) and the various analyses of that data.



- The candidates called for oral examinations were of the standard expected of candidates at the 1st/2i boundary in a Russell Group university and so we feel comfortable that the grade boundaries were drawn correctly.
- Candidates are tending to gravitate towards questions dealing with organic chemistry and away from those dealing with physical and theoretical chemistry. I think there is a good argument for structuring the examination papers in such a way that candidates are forced to answer at least some questions in all three major branches of chemistry.

In summary, I believe the examinations were of a high standard this year and that they reflect the excellent standard of teaching and the high quality of the chemistry courses at Cambridge. I confirm that the examinations were conducted in a fair and impartial manner.

I would also like congratulate Dr Keeler and his colleagues for their excellent level of organisation and also thank them for their cooperation and hospitality when I visited the Department of Chemistry this year and on the two previous occasions.

Yours sincerely,

J. Stephen Clark

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|---|
| Name and Title: Professor John Plane |
| Email: j.m.c.plane@leeds.ac.uk |
| Home institution: University of Leeds |
| Award or subject area examined: Part II and Part III Chemistry |
| Associated University of Cambridge Faculty/Department: Chemistry |

Please tick the statement which most closely reflects your views of the examinations.

TICK HERE

| | |
|--|-------------------------------------|
| <p>The standards set for the award(s) or subject area(s) above were appropriate. The processes for assessment, examination and the determination of awards were sound and fairly conducted.</p> <p>Any recommendations made are for the purposes of enhancement to the course and its assessment.</p> | <input checked="" type="checkbox"/> |
| <p>The standards set for the award(s) or subject area(s) above were appropriate. The processes for assessment, examination and the determination of awards were sound and fairly conducted.</p> <p>HOWEVER, there are some risks to the future assurance of the course and its assessment, as outlined in my recommendations.</p> | <input type="checkbox"/> |
| <p>There are immediate concerns or risks relating to the standards set for the awards or subject areas above and/or the processes for assessment, examination and the determination of awards.</p> <p>These require immediate action on behalf of the University to prevent reoccurrence in the next set of examinations.</p> | <input type="checkbox"/> |

| Please tick as appropriate: | Yes | No | N/A |
|--|--------------------------|--------------------------|--------------------------|
| Are you satisfied that you received sufficient programme materials (programme handbooks, regulations, and marking criteria)? | x | <input type="checkbox"/> | <input type="checkbox"/> |
| Are you satisfied that you were consulted adequately on draft examination papers, and that the level of questions was appropriate? | x | <input type="checkbox"/> | <input type="checkbox"/> |
| Were you given sufficient opportunity to scrutinise the general standard and consistency of marking of examination scripts and coursework? | x | <input type="checkbox"/> | <input type="checkbox"/> |
| Have issues raised in previous report(s) been addressed to your satisfaction? | <input type="checkbox"/> | <input type="checkbox"/> | x |

Please return this form, with your full report, to: vcexternalexaminers@admin.cam.ac.uk by July 31st for undergraduate examinations, 1st October for Masters Degrees, and 12th October for resits.

Or: The Vice-Chancellor, University of Cambridge, The Old Schools, Cambridge, CB2 1TN.

Please also forward copies to your Chair of Examiners.

NOTES FOR EXTERNAL EXAMINERS

Submitting reports to the University

1. All External Examiners are required to submit a written report at the conclusion of their involvement with the examination, and may comment on any aspect of the examination, including the fairness of the assessment and the standards of the candidates for the part of the examination that they are involved with.
2. Reports should be addressed to **the Vice-Chancellor of the University**; payment of the fee and expenses is conditional on receipt of the report.
3. Full guidance on the roles and responsibilities of External Examiners is provided on appointment. It can also be found at: www.admin.cam.ac.uk/offices/education/examiners/external.html for undergraduates and www.admin.cam.ac.uk/offices/gradstud/exams/staff/examiners/mphil.html for graduates. All External Examiners will receive feedback on their full report in line with University policy.

Report structure and content

4. The written report is made available for discussion by the appropriate Faculty or Department concerned with the examination and by the General Board's Education Committee. Reports are usually considered by the senior committees of the relevant Faculties and Departments. These committees include student representatives and reports should therefore be written in a form that avoids discussion of individual candidates by name or candidate number.
5. There is no University standard reporting template, but reports are expected to cover four main areas:
 - the extent to which standards are appropriate for the examination and the qualification;
 - the extent to which standards are comparable with similar programmes in other UK institutions with which you are familiar;
 - the extent to which processes for assessment, and the determination of awards were sound and fairly conducted;
 - any good practice which you feel could be usefully identified for further dissemination.
6. Reports may also include commentary on the following topics, at the discretion of the individual External Examiner:

the examination

- the design, structure and marking of the examination;
- the procedures for assessment, including the basis and rationale for any comparisons of standards made;
- the strengths and weaknesses of the students as a cohort;
- whether your role is appropriate for the examination to which you were appointed, including whether or not you had sufficient access to any material needed to make the required judgements;

the course

- the curriculum, its aims, content and development;
- resources as they impact upon student performance;
- the quality of teaching and learning, which may be indicated by student performance.

General points

7. Submitted reports will only be used in accordance with General Board policy (for the monitoring of academic standards within the institution) and in line with current legislation.
8. In line with UUK recommendations, all External Examiners' reports will be made available, in full, to all students, with the sole exception of any confidential report which may be made to the Vice-Chancellor.
9. The University shall own the copyright in the reports made to them by External Examiners; in accepting the appointment, External Examiners assign all present and future rights relating to the reports and any other materials created in relation to their appointment. External Examiners will also waive any rights including moral rights in connection with those materials.
10. The University will take reasonable endeavours to ensure the accurate reproduction of material and information provided by External Examiners; all other warranties and undertakings are excluded, including liability for direct or indirect loss to an External Examiner.
11. External Examiners are advised that, under the Data Protection Act 1998, the University will process personal information on its External Examiners.
12. External Examiners are also advised that, under the Freedom of Information Act, the University may be obliged to disclose details of their report on request.

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The Vice-Chancellor,
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4th July 2013.

Subject: External examiner's report for Chemistry, Parts II and III

Dear Vice Chancellor

This has been my first year as an external examiner for the Department of Chemistry. My overall impression is very positive - both Parts II and III are rigorous, challenging courses which were assessed fairly, and where the student cohort performed impressively well. This report is now broken down into sections following the suggested guidelines.

The extent to which standards are appropriate for the examination and the qualification

Candidates for Part II and III are examined to a very high standard. They are required to answer problem-solving questions with an unusual amount of mathematics, covering a very wide range of chemistry. Although a large degree of choice is permitted on most of the exam papers, it is not possible to perform well by focusing exclusively on a sub-section of the subject. The exam structure is also not modular, so that accumulated knowledge is being tested in both years.

The extent to which standards are comparable with similar programmes in other UK institutions with which you are familiar

I have been an examiner at four other Russell Group universities in the last 6 years. I think it is probably harder to achieve a 1st Class result at Cambridge, for the reasons alluded to above - the absence of modularity and the degree of mathematical problem-solving in the course. Given the strength of the intake into Natural Sciences, the fraction of 1st Class results at Part III (generally above 40% of the cohort) and Part II (above 30%) seem in line with standards elsewhere. As I discuss in more detail below, marks from practical work and projects are not unduly promoting lower theory marks to produce high overall results.

The extent to which processes for assessment, and the determination of awards were sound and fairly conducted

I was sent the examination papers and model answers in plenty of time to scrutinise them, and my comments and suggestions were responded to in detail by Dr James Keeler, Director of Teaching. The exam papers were produced to an exceptionally high standard, with almost no typographical errors. The standard of the model answers was patchier - some providing the level of detail needed to assess the balance of bookwork versus real problem-solving, and whether the length of the question was appropriate to the time allowed; and others with bits missing and additional sections not contained in the exam question. Dr Keeler clearly does his best to round up model answers from a small minority of recalcitrant colleagues, and corrected versions of these were eventually sent out.

On arrival for the final assessment meetings, Dr Keeler gave the external examiners a thorough briefing to accompany the commendably detailed notes that he prepared. These notes described the small number of errors on the papers that came to light at the start of the exam (2 in Part II, none in Part III). The very limited adjustments to marks on individual questions were then outlined - the average marks on most questions were close to the desired 65%. The notes also contained extensive statistical analyses on exam performance - covering average marks on the papers, choice of questions by area within chemistry, and the historical record of class distributions. The Part III notes also had a detailed explanation of the assessment of projects, which contribute 25% to the final mark. The final part of the briefing contained the suggested class borderlines, and pointed out candidates with unusual mark profiles.

We were then provided with the candidates' exam scripts and project dissertations. Judging from the scripts and project reports, the students were well taught and those in the 2.1/1 group were a very able cohort. In Part III, the average marks on the three papers were between 66 and 68%, and the average project mark was 73%. I was comfortable with the project mark being only about 6% higher and thus not exerting undue influence, so that it was very difficult to get a 1st without getting 1st-class marks on several papers (although one candidate did achieve this). At Part II, the average paper scores ranged from 62 to 67%, and the average practical mark was 69% - again, a nice overall balance.

Most of the exam papers at Part II and III have a wide degree of choice. I like the 3-hr format with the chance for candidates to get stuck into "meaty" problems. Paper 4 at Part II contains compulsory short-answer questions which require students to exhibit a wide range of knowledge across the subject.

The exam questions were in general fairly marked. It would be useful if all markers could annotate the scripts to indicate how marks were arrived at in certain circumstances e.g. in a problem where a small mistake in an early part of the question leads to the rest of the question being wrong because of error carry-through. It is normal to make allowances for this (particularly if the candidate comments at the end of the question that their answer is clearly wrong), but there should be an annotation from the marker stating that an allowance has been made. Only some markers did this.

I was asked specifically to look at some very high average marks (>88%) that were achieved in Statistical Mechanics questions in Part II. I had considered these to be tough problems when scrutinising the papers, so the performance was indeed surprising. However, it turned out that the questions were attempted by a self-selecting handful of mathematically able students, and the marks were fair. In my area of physical chemistry (atmospheric chemistry), I thought the questions were challenging and it was gratifying to see a large fraction of the Part II cohort attempting them and achieving high average marks.

I read through three Part III project reports in some detail, and was impressed by the amount of real research that had been achieved in the comparatively short time available for the projects. This is a sign that supervisors suggest suitable projects, and that students are able in some cases to work in research groups with PhD students and post-docs to get them up to speed quickly - though it was also great to see one student who had designed his own project and shown a large degree of initiative, which was fully recognised in the marks awarded.

The final meeting between the external and internal examiners within the Department of Chemistry was well attended and our advice on borderline cases accepted without further discussion.

Any good practice which you feel could be usefully identified for further dissemination

Apart from technical matters - improved quality of some model answers, more annotation of exam scripts by the markers - there is very little to add apart from one thing. Most universities have now dispensed with *viva voce* exams for candidates, and so are introducing other mechanisms for external examiners to meet the student cohort. These provide an opportunity in the right setting (e.g. at a project oral exam, or a poster session) to gauge student knowledge and attainment. Talking to students usually also provides useful feedback for the department on the course. For instance, at the University of Leeds (where vivas have been abolished), we invite the externals to our MChem project poster day, and

provide a lunch for them with around twelve 4th year students. This seems to work well from both sides. Such a scheme can of course operate in addition to vivas.

In conclusion, I would like to thank Dr Keeler and the other internal examiners for facilitating the work of the external examiners and enabling the process to run so smoothly this year.

Yours sincerely,

A handwritten signature in cursive script that reads "John Blane". The signature is written in dark ink on a white background.

Mjr/jr/mydocs/correspondence/Camexamining13

10th July 2013

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External Examining - Chemistry examination Cambridge University

The examination process was outstandingly well-organised by Dr Keeler. The questions in inorganic and materials chemistry are demanding and require the candidates to deliver considerable challenging technical detail in their answers. Given the demonstrated excellence of the students, I am sure they could be pushed even further from examples covered in the lecture courses.

The large contribution made by the project in Part III was notable in contributing to the success of some candidates in attaining first class degrees with few first class marks in the written papers. There was no problem with this in principle as there are many talented researchers who are not as strong in examinations as in research itself, but does clearly point to the need for oversight of the project mark versus other marks, and for mechanisms to validate project marks that are high in comparison with exam performance.

I feel that a process is needed to ensure the numerical accuracy of the scores returned for each script, as the error rate was high. I hope colleagues will support Dr Keeler and the external examiners by promptly providing all the model answers next year as this is a key part of validating the questions set and thus the whole examination process.

Yours sincerely



Matthew Rosseinsky

Response to the External Examiners' reports for Part II and Part III Chemistry 2013

We are grateful to the External Examiners for the care with which they undertake their duties and for their helpful reports. The scrutiny and advice which they offer remains a crucial part of the quality assurance process for our degree, and as such the comments by the External Examiners are taken very seriously.

Model answers

The provision of model answers is a crucial part of the process of setting the question papers, both as a discipline to the question setter and also as the key way in which the External Examiners are able to judge the level and scope of a question. Colleagues are asked to provide detailed model answers along with their questions, and the vast majority comply with this request. However, there remain a small minority who, for some reason, do not comply. Ultimately, the Examiners have no sanction to impose on these people, other than to point out that their behaviour is unprofessional. We will continue to make it clear to all those involved in setting questions that appropriately-detailed model answers, which include a clear indication of how marks can be earned, are required.

Assessment of Part III projects

Evolving a method for the fair and objective assessment of the Part III projects has been an ongoing preoccupation of both the Teaching Committee and successive generations of External Examiners. The present system is designed to make sure that the project supervisor does not exert too strong an influence, and also to ensure some consistency of assessment by making sure that each Examiner is involved in the assessment of a range of projects. The *pro forma* used for assessing the projects gives detailed guidance on how to mark different aspects of the project. Nevertheless, it remains the case that there is a tendency for certain members of staff to award what seem to be very high marks, and then to defend these marks strongly when challenged. There are also differences in the behaviour of different sectors of the Department.

One solution would be to rigorously enforce some level of uniformity in the average marks awarded to projects undertaken in different sectors of the Department. The problem with this is that it may in fact be the case that those students undertaking projects in one sector are indeed exceptionally strong, and that to down-grade their marks to align them with the other sectors would be unjust.

The External Examiners also point out a number of cases where a candidate has a project mark which is much higher than any of the marks they have on the theory papers. In a few cases this profile of marks led to candidates being awarded a first class even though they had no first class mark on any theory paper. It has to be recognized that there are some students who will achieve more highly in continuously assessed work than in traditional examinations, and that the average mark for project work is likely to be higher than that for written examinations. Nevertheless we agree that for candidates where there is a wide discrepancy between the project and theory marks, especially where this results in a change of class, the Examiners should, as a matter of routine, consider whether or not the project has been over marked.

In summary, the actions we intend to take are: (a) to continue to emphasise to those assessing projects that they must adhere to the guidelines given in the *pro forma*; (b) the Examiners will scrutinise projects with unusually high marks and, if appropriate, moderate these *even if this goes against the wishes of the project supervisor/assessors*; (c) candidates close to borderlines who have a substantial difference in performance between their theory papers and project mark will have their project mark closely scrutinised.

Errors in the draft questions

We deeply regret the significant errors which were present in two of the questions in the draft papers which were sent to the External Examiners, and are grateful to Prof. Clark for pointing these out. The process of setting the questions requires them to be checked by a second person, and we will continue to emphasise the importance of such checks.

Style of questions

The vast majority of the questions on the papers are either entirely based on problem solving or have a substantial problem solving part. Essay questions, or questions which are simply descriptive, are not forbidden by the Examiners, but we note and accept Professor Clark's concern that such questions should be sufficiently structured as to enable the candidates to work out what it required and how marks will be awarded.

Almost all questions are broken down into parts and the marks allocated for each part are indicated on the question paper. We agree with Prof. Clark that providing an appropriate level of detail about how the marks are broken down is important, and will continue to ensure that this is the case for all questions.

Part marks

Many markers assign 'part marks' in the margin of a script and then add these up to give the final mark on the front cover. However, as has been pointed out, this is not universal practice. Some markers simply use 'ticks', and it is not clear what the correspondence is between marks and ticks. In some cases, the part marks did not add up to the total mark, and it is not clear whether this is simply an error in addition or a deliberate decision. In addition, some markers are marking out of a seemingly arbitrary number and then scaling to give the required mark out of 20 or 25.

We agree that these practices are potentially confusing and result in a lack of transparency. We will therefore instruct markers that: (a) part marks must clearly be assigned using *numbers* written in the margin; (b) the mark on the front of the script must equal the sum of the part marks; (c) it is the responsibility of the marker to check this addition – however, the technicians will make some spot checks and if the error rate is too high the whole set of scripts will be returned to the marker; (d) questions should be marked out of the required number or some simple multiple of it.

Degree of specialization permitted in the course

Professor Clark comments on the desirability of restructuring the course in such a way as to require students to answer questions on broader range of chemistry than is presently the case.

Our course is unusual in that in the first two years our students are studying subjects other than chemistry. These are not 'supplementary subjects', but the same courses as those studied by students who will eventually specialise in other areas of science. For example, if a Chemist takes

Physics in the first year, and Physics in the second year, he or she will be doing exactly the same courses as a student who specializes in Physics in the third and fourth years. Natural Science students are therefore exposed to a range of high-level science in their first and second years.

Within our first- and second-year Chemistry courses there are no choices: all students study the same material which forms the core of the subject. This continues for the first third of the third year and only from that point onwards is there any element of choice; in the fourth year there is free choice from a wide range of topics, many of which are closely related to the research undertaken in the Department. Other Russell-Group universities have different structures to their courses, with a different balance between compulsory and optional elements, and thus produce graduates with a different profile of skills and experiences. There seems to be no reason for not welcoming this diversity.

Professor Plane expresses a rather different view of the course structure, and does not feel that the large degree of choice is a problem.

***Viva voce* examinations**

Professor Plane comments that many universities have now dispensed with *viva voce* examinations, and that we should perhaps consider point the same. This suggestion has been made before by External Examiners, but others have expressed the view that the *viva voce* examinations are a useful facility when it comes to setting class boundaries. For the present we would prefer to keep the option of *viva voce* examinations, but will keep this under review.

Draft to the Teaching and Outreach Committee 19/10/2013; Approved by SMT 18/11/2013.