

Name	Professor Alison Hulme					
Home Institution	The University of Edinburgh					
Email Address	Alison.Hulme@ed.ac.uk					
Name(s) of course(s) examined <i>e.g. Tripos Part/ MPhil/ MRes</i>	Chemistry Tripos Part II & Part III					
Academic year of examination	2024-25					
Level (<i>Delete as appropriate</i>)	Undergraduate			Postgraduate		
Year of Appointment	1 st	2 nd	3 rd	✓	4 th	
				Yes	No	N/A
1. Are the academic standards set for the award appropriate for the qualification, and comparable with similar programmes in other UK institutions?				✓		
2. Are you satisfied that you received sufficient programme materials (handbooks, regulations, marking and classing criteria) in a timely manner?				✓		
3. Are you satisfied that you were consulted adequately on draft examination papers, and that your comments and suggestions were taken into consideration?				✓		
4. Are you satisfied that the assessment was pitched at the appropriate level?				✓		
5. Was the general standard and consistency of marking appropriate?				✓		
6. Do the assessment processes measure student achievement rigorously and fairly against the intended outcomes of the programme?				✓		
7. Are you satisfied that issues raised on your previous report form have been properly considered and, where applicable, acted upon?				✓		
8. Did you receive a written response from the Department to your previous report form?				✓		
If you replied No to any of the questions above, please expand here:						

Do you have any concerns about the course, including standards and quality?

The Part II and Part III Chemistry courses are excellent, easily equal to or better than courses taught elsewhere. The organic and biological components cover a range of contemporary topics and Part III in particular highlights many current research interests in the Department.

As noted in previous reports, there is perhaps something of a disconnect in the content between Part II and Part III, but I am delighted to understand that the Department is conducting a review of teaching content to ensure more continuity and to look for any obvious gaps in “core” content at the Part II level. Thinking of the likely employment sector of many graduates from the degree programme, this might usefully include a review of the “Medicinal Chemistry” content of the course. Furthermore, considering the current direction of chemical research, and indeed the topics of several Part III projects, this review might also include updating the coverage of computational tools and AI approaches used in chemistry.

Are you satisfied that the procedures associated with the assessment are efficient (e.g. timeframes, draft papers, questions, design and conduct of exam, meetings, vivas)?

Overall, the procedures associated with the assessment operated very smoothly this year, which made my role as External Examiner much easier to perform. Draft papers were received in a timely fashion and were mostly in very good order by the time I received them. Mark schemes given at the time of question setting were largely complete, allowing me to assess the depth of understanding required of students and check for any minor errors with ease. I saw very brief responses to my suggested changes before papers were produced, providing reassurance that they had been acted upon appropriately.

Papers contained a wide range of question styles and some really nice problem-solving questions. One or two questions still remain where one of the challenges for students is reading all of the material presented before they can even start to attempt the question. An agreed page limit to questions (3 pages?) might fix this anomaly. In addition, a couple of questions that were “too easy” remained in the draft papers sent to External Examiners, but these were generally from younger/less experienced colleagues and were revised in response to comments from the External Examiners. Whilst there were still a few minor errors which crept into the final production of the examination papers, these were mostly spotted before the examinations themselves and dealt with appropriately.

As in previous years, we chose not to viva borderline students; at most universities this practice has been abandoned as it is seen to be unfair on the subset of students that are subjected to it. More effective moderation is already enabled through the presentation/interview process associated with projects in Part III. The department could consider recording these for Externals to review, if an alternative algorithm for degree classification (see below) is not pursued.

Do you have any comments on marking and classing (e.g. range of marks, action around borderline marks, penalties, moderation, double marking, reconciliation of marks)?

Each paper in the Part II and Part III tripos is marked across multiple markers, negating the need for double marking. Marking seems fair, and in accordance with the submitted mark schemes, and scripts are annotated to indicate where marks have been gained/lost. There is a reasonable spread of marks in each question and the processes for checking these marks are robust. Markers currently mark to a mean of 65%, which is higher than at many other institutions, and this could be reviewed in future if concerns

about grade inflation were raised. A considerable discrepancy in mean marks for the “equivalent” papers 2A and 2B at Part II level led to the scaling of one paper; the process employed appeared robust and the net effects of this on individual student classifications was taken into consideration at the Exam Board meetings.

The annotation of project reports (from the ones which I saw) is often fairly minimal. But the mark descriptors and the comments alongside these give confidence that the projects have been reviewed fairly. The new weighting of marks from the project supervisor and independent assessors appears to have bedded in well, giving a robust outcome to the project assessment process. Practical (Part II) and project (Part III) marks have higher means than written papers, but this is quite normal in Chemistry degrees.

A high proportion (51%) of Part III students have obtained a 1st class MSci degree, which is perhaps not surprising since students must obtain at least a 2i to progress to Part III. The distribution of 1st's male/female in Part III actually lay in favour of females this year, which allays some concerns raised in previous years. But this distribution clearly fluctuates from year to year; the data for the current Part II cohort (where males outweighed females in the percentage of “good degrees”) suggests that this might be reversed next year.

Borderlines are determined by mean weighted percentage across all components of assessment. I was slightly surprised that we were asked to look at potentially downgrading a small number of Part III students who were just above the first threshold. External Examiners looked at both project reports and examination papers for these candidates and saw no need to demote them to 2i. However, the placing of another couple of students higher up the mark list, by virtue of outstanding project marks overriding much weaker results in examination papers, gave mark profiles which might not be considered desirable for 1st class students. I was able to review these projects at the time of the Exam Board meetings and concluded that the project marks were justified by the amount and quality of work that each of these students had achieved. It appeared that these students had perhaps (either deliberately, or less consciously) given less attention to the examination papers than was desirable.

Do you have any comments on the student experience of the course and/or their experience of the assessment process?

I was unable to attend the meeting with the Part II/III students this year, however my colleagues noted that once again students commented on how engaging the course was and how much staff (at all levels) seemed to “care”. The welcoming and inclusive nature of the department has been a recurring theme throughout my time as External Examiner and it is very much to the credit of the department. Another repeated aspect of these discussions has been how much students enjoy the Part III research project and the opportunity that this presents to be embedded in world-class research groups conducting exciting and innovative research.

Another recurrent theme has been the variability in the quality of tutorial provision from college to college (although I understand that steps have been taken within the department to try and mitigate this, this year). Students suggested that the provision of whole class workshops for each course (as often seen in a “flipped” learning environment) in addition to supervisions, might help to further iron out disparities from college-to-college. There was again a discussion about the lack of availability of past

papers to aid revision. In addition, some students suggested that further staff training was needed to ensure appropriate accommodation of disabilities within the tutorial environment.

This year students commented on how they would like to see more employability skills (including group work, training and assessment in presentation skills, and open-ended practicals in Part II) included in the Chemistry degree programme. They also commented on how peer-to-peer learning could be enhanced through a Part III poster symposium which Part II students could attend prior to making project choices.

Do you have any comments on University policies (e.g. the role of the external examiner, policies around plagiarism, script annotation)?

The role of the External Examiner for Part II and Part III chemistry courses is clear. The Department has not been required to resort to University-level assessment of any plagiarism during my appointment, this is no doubt due to a predominantly examinations-based mode of assessment. Chemistry lends itself to the development of robust marking schemes for assessment, thus script annotation can accurately reflect whether candidates have tackled the question correctly.

My main concern is how EAMC cases are handled by the University. In other Universities where I have acted as External Examiner, and at my own institution, exceptional circumstances affecting student performance in examinations are considered before the Exam Board meets with decisions made as to what is to be discounted, or adjusted, for the students affected. This ensures that the External Examiners can see that these have been dealt with appropriately, and make any judgements needed for students whose marks are raised to borderlines. Whilst the current retrospective EAMC process will undoubtedly reduce the number of cases to be dealt with, it means that these cases do not gain the oversight of the External Examiners. This year in reviewing the mark sheets, we identified a small number of students where there appeared to be a clear case for EAMC adjustment – but we have no knowledge of what will actually happen to these students.

Please describe here any recommendations for improvement.

The weighting of supervisor to independent assessor contributions to the project mark in Part III seems to be more robust since the changes introduced in 2023-24. However, there may be a need to remind assessors (again) of the need to read carefully the descriptors for assessment criteria before assigning marks, to ensure that the comments and marks awarded are in alignment in all cases. I believe there is a need to build a small library of projects, which are both well annotated and where the comments align clearly with the marking descriptors, to be available to new project assessors who lack prior experience in assessing at this level. It is important that younger staff members taking on these assessment roles are adequately trained so that they can provide a robust and independent part in the process. As noted above, there is potential for recording project presentations and interviews to allow the External Examiners to review this as part of the Exam Board moderation process.

Alternative means of determining (borderline) classifications were discussed with the Internal Examiners at the time of the Exam Board meetings, such as requiring a preponderance of marks in the upper classification category for this to be awarded. If students were aware of this requirement, it might ensure that examinations were given as much attention as the research project, particularly at Part III level. Changes such as these could be introduced as part of the current course review process, but should be analysed using several years of past data to understand the impact that they might have on

degree classifications. Any changes implemented would need to be communicated to students several years in advance of their activation.

Please highlight any good practice you encountered.

The Part III project allows students to conduct an in-depth piece of research. The opportunity to become embedded within research groups and see research as it really is, is a critical part of their scientific training at this level. The projects offered are varied and demanding, and take place within research groups across the Department. The selection of projects which I was able to view indicated a generally very high level of performance by the students and this is reflected in the marking.

This year one project report of the ten highest similarity scores on Turnitin gave cause for concern. Plagiarised material was found to appear mostly in the introduction and future work sections of the report, and to be derived from the report of a previous student in the same research group. The student was challenged about this in their presentation and interview, and their project report marks were reduced to reflect the poor scholarship in its production. I felt this was both an appropriate level of response and course of action.

This year Exam Board meetings were moved to Wednesday and Thursday to give the teaching office staff time to handle scripts and prepare material for the External Examiners in normal working hours. This worked well and I would strongly recommend that it is repeated in future years.

Have you seen any evidence of grade inflation?

Data provided by the department shows that this year the percentage of first-class degrees (51%) awarded at Part III will be the highest since 2016. Whilst there is clear fluctuation from year-to-year, and correlation with perceived cohort abilities, this is >8% higher than the mean over the intervening years. If this trend continues then some of the suggestions above (marking questions to a mean <65%, considering how degree classes are awarded e.g. with a preponderance of marks in the upper class, etc.) could be implemented. Part II classifications are in line with data for the past 10 years.

If this is your final year as external examiner? If so, have you seen improvements over your tenure? Has the Department acted on your advice?

This is my final year as an External Examiner for the Department of Chemistry; overall this has been an very enjoyable experience. I have seen significant improvements to how the examinations process has been run, but recognise that many of the problems encountered in earlier years were due to unexpected staff absences/illnesses. I was delighted to receive correspondence last year outlining actions taken by the Department following the recommendations of the External Examiners in their 2022-23 and 2023-24 reports. In particular, a review of course material over all years of the undergraduate degree is currently being conducted, the student support and wellbeing provisions have been reviewed and found to match or better those of other Departments within the University, supervisor and demonstrator training is being improved year on year, and the timeline of the examinations process has been optimised.

Do you have any other comments?

I am very grateful for the provisions which have been made to ensure that I can conduct my role as External Examiner effectively during my appointment. Last year I was unable to sit down for long periods of time and the stand-up desktop provided at the final Exam Board meetings was invaluable. This year, following recent surgery, I needed to attend the final Exam Board meetings remotely. The Meeting Owl provided for remote conferencing worked extremely well and meant that I could converse effectively with my fellow External Examiners, as well as reporting back to the Full Board of Examiners. Whilst it didn't (and couldn't) replace the full in-person experience, and probably wouldn't have worked as well if I had been in my first year as an External Examiner at Cambridge, as a one-off it was fine.

Name	Professor Nicholas Long			
Home Institution	Imperial College London			
Email Address	n.long@imperial.ac.uk			
Name(s) of course(s) examined <i>e.g. Tripos Part/ MPhil/ MRes</i>	Natural Sciences Tripos, Chemistry Parts II and III			
Academic year of examination	2024/25			
Level (<i>Delete as appropriate</i>)	Undergraduate		Postgraduate	
Year of Appointment	1 st	2 nd X	3 rd	4 th

	Yes	No	N/A
1. Are the academic standards set for the award appropriate for the qualification, and comparable with similar programmes in other UK institutions?	X		
2. Are you satisfied that you received sufficient programme materials (handbooks, regulations, marking and classing criteria) in a timely manner?	X		
3. Are you satisfied that you were consulted adequately on draft examination papers, and that your comments and suggestions were taken into consideration?	X		
4. Are you satisfied that the assessment was pitched at the appropriate level?	X		
5. Was the general standard and consistency of marking appropriate?	X		
6. Do the assessment processes measure student achievement rigorously and fairly against the intended outcomes of the programme?	X		
7. Are you satisfied that issues raised on your previous report form have been properly considered and, where applicable, acted upon?	X		
8. Did you receive a written response from the Department to your previous report form?	X		
If you replied No to any of the questions above, please expand here			
N/A			

Do you have any concerns about the course, including standards and quality?

No, this is a high quality, challenging course – on a par with other internationally leading Departments of Chemistry.

Are you satisfied that the procedures associated with the assessment are efficient (e.g. timeframes, draft papers, questions, design and conduct of exam, meetings, vivas)?

Yes, all was fine for this external examiner. This year, the Department gave itself a few extra days to compile all the report and the examination data, and for the general internal vetting process, ahead of the External Examiners meeting – which was sensible and enabled smoother running of the process.

Do you have any comments on marking and classing (e.g. range of marks, action around borderline marks, penalties, moderation, double marking, reconciliation of marks)?

The scripts and project reports that I examined were accurately and thoroughly marked. I scrutinised the project marking in detail and was very happy with the process and balance of supervisor mark, with independent markers comments and % contribution, as well as the weighting of the oral and presentation marks. There seems to be a good balance overall within the project marking and the balance between exam and project-based assessment in the Part III stage of the course. The project write-ups have a sensible word limit.

The external examiners were asked to have a detailed look at several Part III projects and how the marking had been carried out – especially for some borderline candidates and some other students who had received exceptionally high marks. After scrutiny, we decided that everything was in order.

With regard to the degree classification, the examiners were asked to scrutinise the data to ensure that the unusually high amount of first class degrees awarded at Part III level this year (51%) was accurate and fair. The examiners decided that everything was in order, and that the graduating class was exceptionally strong this year.

Do you have any comments on the student experience of the course and/or their experience of the assessment process?

The external examiners had an enjoyable and valuable meeting (of around 90 mins) with a group of around 15 Part II and Part III students, who were honest and open in their feelings about the course. They were largely very positive about the degree experience in the Chemistry Department, and they felt well cared for. They did have some points of concern and ideas for improvement. Some specific points have been relayed to the Department, but there was a general feeling of some disconnect with the Colleges and Department in terms of consistency of supervision teaching with respective Directors of Studies.

In terms of consistency of teaching in supervisions and laboratory courses, I am aware that improvements have been made but the Department should further consider the training of new supervisors or demonstrators – especially for researchers and teachers who are new to the Cambridge

system – and in general, how resources (e.g. work sheet, previous exam questions and model answers) and good teaching and tutorials practice could be shared amongst all teachers.

The students would also like to see more 'group work' and assessment introduced during each year of study as it appears that such group work and practice at presentations is currently minimal throughout the degree.

Do you have any comments on University policies (e.g. the role of the external examiner, policies around plagiarism, script annotation)?

No, all seems appropriate and in order.

Please describe here any recommendations for improvement.

No, all seems appropriate and in order.

Please highlight any good practice you encountered.

This year, the examination question setting process was very smooth and on time. I was pleased to receive a short report or reply following my comments on exam questions, and it was very helpful to learn of suggested changes made and/or why changes didn't need to be made in the setter's opinion.

Have you seen any evidence of grade inflation?

No, all seems appropriate and in order.

If this is your final year as external examiner? If so, have you seen improvements over your tenure? Has the Department acted on your advice?

N/A

Do you have any other comments?

In general, the process was very smooth and I greatly appreciated the information and support from the Part II and Part III examiners. The set of model answers to accompany the exam questions were generally good and in order. Many colleagues supplied very accurate and helpful model answers but there are still some who provide only perfunctory or hand-written notes. The Department is encouraged to insist on good quality model answers from all colleagues.

I would again suggest that the Department looks at the allocation of Part III projects. The process seems rather opaque with some colleagues supervising several Part III project students and others not supervising any at all. I would suggest that each full-time member of staff should supervise a minimum of one student. In addition, I would suggest that the practice of allowing supervisors to have input into which student they supervise should be discontinued as this does not seem fair or equitable.

The external examiners were asked to input comments to the Chair of the Curriculum Review committee and were happy to contribute to this.

Name	Prof. Dudley E. Shallcross			
Home Institution	University of Bristol			
Email Address	d.e.shallcross@bris.ac.uk			
Name(s) of course(s) examined <i>e.g. Tripos Part/ MPhil/ MRes</i>	Chemistry Tripos Part II & Part III			
Academic year of examination	2025			
Level (<i>Delete as appropriate</i>)	Undergraduate		Postgraduate	
Year of Appointment	1st	2nd	3rd	4th

	Yes	No	N/A
1. Are the academic standards set for the award appropriate for the qualification, and comparable with similar programmes in other UK institutions?	✓		
2. Are you satisfied that you received sufficient programme materials (handbooks, regulations, marking and classing criteria) in a timely manner?	✓		
3. Are you satisfied that you were consulted adequately on draft examination papers, and that your comments and suggestions were taken into consideration?	✓		
4. Are you satisfied that the assessment was pitched at the appropriate level?	✓		
5. Was the general standard and consistency of marking appropriate?	✓		
6. Do the assessment processes measure student achievement rigorously and fairly against the intended outcomes of the programme?	✓		
7. Are you satisfied that issues raised on your previous report form have been properly considered and, where applicable, acted upon?			✓
8. Did you receive a written response from the Department to your previous report form?			✓
If you replied No to any of the questions above, please expand here:			
Do you have any concerns about the course, including standards and quality?			
It's not a concern as such, but when discussing the course with students, more clarity about how projects are allocated would be welcome.			

Are you satisfied that the procedures associated with the assessment are efficient (e.g. timeframes, draft papers, questions, design and conduct of exam, meetings, vivas)?

✓

Do you have any comments on marking and classing (e.g. range of marks, action around borderline marks, penalties, moderation, double marking, reconciliation of marks)?

I can state that we were asked specifically to investigate borderlines at Part II and Part III and we were content that marks were correct and that the proposed degree classifications were correct.

Do you have any comments on the student experience of the course and/or their experience of the assessment process?

Students feel supported by the department. There is some inconsistency between projects (time dedicated, level of support etc.) but it was clear that this variation was small enough to not be a deciding factor in the student journey. Variability in terms of supervisions was noted but this is outside the control of the department in general. Consistency of supervisions, i.e. training of tutors was noted and in particular training of supervisors to be comfortable in the support of students with disabilities (e.g. dyslexia). More opportunities to present (oral, poster etc) before part III would be welcomed and opportunities to conduct group work.

Do you have any comments on University policies (e.g. the role of the external examiner, policies around plagiarism, script annotation)?

No

Please describe here any recommendations for improvement.

The most obvious is providing more opportunities for students to present work in a variety of formats, before part III and during part III (e.g. poster presentation to part II students).

Please highlight any good practice you encountered.

Final year projects are in general run very well.

Have you seen any evidence of grade inflation?

No, there are more firsts being awarded than the last few years but the work viewed and exam scripts suggest that this is fully justified.

If this is your final year as external examiner? If so, have you seen improvements over your tenure? Has the Department acted on your advice?

No

Do you have any other comments?

The organisation and running of the external review were excellent. All data required were made available and we felt that we could investigate any area.