The University of Edinburgh

Internal Periodic Review 2019/20

Internal Periodic Review of Chemistry

11 and 12 March 2020

Final Report

Section A – Introduction

Scope of the Review

Range of provision considered by the review - Appendix 1

The Internal Periodic Review of Chemistry consisted of:

- The University's remit for internal review – Appendix 2
- The subject specific remit for the review- Appendix 3
    - Employability, skills and careers awareness
    - Supporting a student learning community
- The reflective report and additional material provided in advance of the review (material listed in Appendix 4)
- The visit by the review team, including consideration of further material – Appendix 5
- The final report produced by the review team
- Action taken by the School and others to whom recommendations were remitted following the review

Membership of the Review Team

Convener and Internal Member	Dr Emily Taylor (School of Health in Social Science)
External Member	Professor Tina Overton (Leeds Institute for Teaching Excellence, University of Leeds)
External Member	Dr Alisdair Brown (Afton Chemical)
Student Member	Nevin Birer (School of Law)
Review Team Administrator	Philippa Ward (Academic Services)

Questions were also submitted by Dr Nina Morris (School of GeoSciences) in advance of the review.

School Location and Context

The School of Chemistry is one of seven Schools within the University's College of Science and Engineering. Is it based in the Joseph Black Building at King's Buildings where it has lecture theatres (allocated through the University's central timetabling system), small group teaching and laboratory facilities. Due to space constraints, some larger lectures for earlier years of teaching are delivered in George Square.

Date of Previous Review

12 and 13 March 2014

Reflective Report

This was compiled by Professor Michael Seery, Director of Teaching in the School of Chemistry, and was informed by:

- the School Quality Assurance Report, written by Dr Simon Daff, Director of Quality Assurance
- School Learning and Teaching Committee meetings
- Staff Student Liaison Committee meetings (which discussed the content of certain themes)
- Student surveys (to inform the themes of the review)
- a School Strategy Day attended by various senior staff and Professional Services colleagues

Section B – Main Report

Executive Summary

Chemistry is a vibrant School with an impressive sense of community. There is strong management in place, students and staff are high calibre, and academic standards are excellent. Significant work has been undertaken since the previous internal review to streamline and enhance the School's offering. The School gives careful consideration to the student voice and is mindful of equality and diversity considerations. Areas for potential improvement include modes of teaching delivery and assessment, the Year Three curriculum, transferable skills and careers' development within the core curriculum and staff development.

1. Strategic Overview

1.1. The School of Chemistry has strong management and leadership in place. This has been strengthened through recent investment in leadership training for Academic and Professional Services staff, an initiative that is **commended** by the review team. The review team did note that many of the School-level roles are currently being performed by a relatively small number of staff, leading to some questions around system resilience. It is **recommended** that the School gives further consideration to succession planning for teaching-related roles (Course Organisers, Course Committee membership etc.) and wherever possible, adheres to the principle that roles should normally be held for a fixed-term, five year period.

1.2. As noted by the School's industrial partners, the School's staff and students are high calibre resulting in excellent academic standards. The School has a **commendable** and globally recognised research reputation which benefits its student recruitment efforts. Chemistry has capitalised on this situation by appointing a Marketing Manager. The positive impact of this role can be seen particularly in the School's increased postgraduate taught student numbers and the appointment is **commended** by the Review Team.

2. Enhancing the Student Experience

2.1. The Approach to Enhancing Learning and Teaching

<u>Portfolio of Programmes and Courses</u>

2.1.1 Significant work has been undertaken by the School since its 2014 internal review to streamline and enhance its portfolio of programmes and courses. Chemistry has removed several of its lower recruiting undergraduate programmes and now admits students at either Bachelor (BSc) or Masters (MChem / MChemPhys) level to one of three programmes: Chemistry, Medicinal and Biological Chemistry or Chemical Physics. This change has simplified the School's undergraduate offering and appears to have had a positive impact on recruitment. It is **commended** by the review team.

2.1.2 The School has also revised the structure of its undergraduate Masters programmes in the later years: all students now undertake a full-year research project in Year Five whereas previously, different arrangements were in place across Years Four and Five depending on whether students chose to do their research project in Edinburgh or in industry or abroad. Whilst there have been some teething problems, the changes have simplified administrative

arrangements for the School and have broadly been well received by students. The changes are again **commended** by the review team.

2.1.3 Significant concerns were raised by students during the review about the content of Year Three for all undergraduate programmes: students consider the year to be heavily overloaded and as 'something to be survived'. The review team noted that all years of the programme represent 120 Scottish Credit and Qualifications Framework (SCQF) credits, and as such should involve equal time commitment. It is **strongly recommended** that, now that Chemistry has finished making changes to Years Four and Five, it gives careful consideration to the content of the Year Three curriculum and the associated assessment load.

2.1.4 Chemistry currently offers two taught postgraduate programmes, MSc Materials Chemistry and MSc Medicinal and Biological Chemistry. Students interviewed by the review team were very complimentary about the structure of these programmes and the extent to which they are research-led and take account of the latest developments in the field. The School is seeking approval for a third MSc in Analytical Chemistry to be introduced in academic year 2020/21. Chemistry's existing PGT programmes and PGT expansion plans are **commended**.

2.1.5 In relation to courses, Chemistry has given careful consideration to student satisfaction data and is taking steps to remove or amend less popular Honours courses. The School is also planning to introduce a new Year Two course in Computational Thinking (or similar) to enhance students' data-related skills. This is considered to be a timely and **commendable** development.

Teaching Delivery

2.1.6 The School's teaching is delivered through lectures, small group tutorials and a laboratory programme.

Lectures

2.1.7 As previously noted, some of the students interviewed during the review highlighted research-led content in Masters-level lectures. They also discussed occasional use of innovative teaching techniques within lectures, such as the use of Top Hat. However, students also noted that there is variation in the quality of lectures: some lecturers add little or no value to the lecture slides and this discourages student attendance. Taught postgraduate students, who are co-taught with undergraduate students, expressed some concern about the size of lectures having been taught in much smaller groups at their previous institutions. It is **recommended** that the School sets aside time to consider ways in which it might reduce its reliance on traditional lectures and diversify teaching approaches. Opportunities to offer more online or blended learning should be considered. Staff development is likely to be key to this and is discussed in more detail in section 2.7 of this report. In relation to the size of lectures, the review team recognises that teaching needs to be delivered in a cost-effective manner and that smaller group teaching is therefore not always possible.

Tutorials

2.1.8 The School offers generous tutorial provision. The introduction of longer, bespoke tutorials for taught postgraduate students has facilitated deeper learning for this group and has had a positive impact on cohort development.

2.1.9 There is ongoing debate within the School about the optimum size for undergraduate tutorial groups: in addition to continuing to offer small group tutorials, Chemistry is also now offering some larger tutorials which bring together four to six groups. A team of tutors move between the groups to discuss topics of interest and difficulty. Academic staff and some year groups consider this to have been successful as it has reduced the variability associated with individual tutors and groups. However, some students expressed concern during the review about the larger format: they were of the opinion that it provides less incentive to participate, and makes it more difficult to have questions answered. The School is advised to continue evaluating the best way of delivering its undergraduate tutorial programme in all year groups.

Laboratory Programme

2.1.10 The School's laboratory programme is **commended:** it facilitates excellent, progressive development of technical and research skills across the five years of the programme.

2.2. Assessment and Feedback

2.2.1. Academic standards within Chemistry are high and overall pass rates are excellent across almost all students groups. (This is discussed in more detail in section 2.5 of the report.)

<u>Assessment Types</u>

2.2.2. Assessment of courses within the School is primarily through end of course examinations and laboratory work. There are some exceptions to this, for example Chemistry 3P also makes use of project-based learning activities, group poster presentations, oral presentations and a literature comprehension exercise. In Year Two, the number of compulsory laboratory reports has recently been reduced to provide space to assess in alternative ways, a development that is **commended** by the review team. It is now **recommended** that the School aims to build on this work by reviewing the quantity and types of assessment used across all years. The review team is of the view that there would be benefit in further diversifying assessment types and in ensuring that, as a broad principle, assessment is <u>for</u> learning, rather than purely <u>of</u> learning.

<u>Feedback</u>

2.2.3. Taught postgraduate students interviewed during the review noted that they appreciate the continuous feedback they receive on the literature reviews they undertake. This practice is **commended** by the review team.

2.2.4. The University's Taught Assessment Regulations (Regulation 15) require all students to be given at least one formative feedback or feed-forward event for every course they undertake. The review team considered there to be a lack of clarity around the School's approach to providing formative feedback in its undergraduate programmes: model questions and answers offered through the tutorial system aim to prepare students for end

of course exams, but it is not always clear to students that this is what is intended. It is therefore **recommended** that the School develops a more systematic and explicit approach to providing formative feedback opportunities for all undergraduate courses.

2.3. Supporting Students in their Learning

Sense of Community

2.3.1. 'Supporting a student learning community' was one of Chemistry's subject specific remit items for the review. The item was chosen on the basis that, while students on programme report feeling part of a well-embedded community, National Student Survey (NSS) scores relating to Learning Community, Academic Support and the Personal Tutor system all dropped in 2019.

2.3.2. The review team gave careful consideration to this issue during the review, and like the School, was unable to identify reasons for the decline in NSS results beyond the distorting impact on scores of small numbers of respondents. The team found there to be an impressive and **commendable** sense of community within Chemistry: there is excellent integration across staff groups and students feel well connected within their cohorts, across year groups and with academic staff. The 'Social Space', which provides a high quality communal area and is used by all groups within the School, 'Chemunity', which fosters mental health awareness, Academic Families, which connect students across years and 'ChemSoc' all add to the sense of community.

Personal Tutor System

2.3.3. The School's Personal Tutor system is highly valued by students. The majority of students interviewed during the review had developed a strong relationship with their Personal Tutor, and appreciated the fact that they saw them regularly during the week because of their involvement in teaching. Those who had had a less positive experience of the system had found it easy to discuss the matter with the School's Senior Tutor and to request a change of Personal Tutor.

2.3.4. The University will bring a new model of student support into operation in academic year 2021/22. The review team **commends** the excellent, one to one relationship that exists between Personal Tutor and student under Chemistry's current system, and **recommends** that the School considers ways in which elements of this might be retained within the new model. However, the team also recognises that Chemistry's existing Personal Tutor system, which relies on a small number of staff, is overstretched and unsustainable. The School should therefore take full advantage of the opportunities afforded by the new model's enhanced Professional Services Student Experience Team.

Chemistry Teaching Organisation

2.3.5. The review team **commends** the administrative support provided by the Chemistry Teaching Organisation. Students particularly value the fact that the Organisation provides a named contact for each year group, resulting in excellent levels of support.

Laboratory Programme

2.3.6. Students discussed the positive impact of the School's laboratory programme on their University experience. They appreciate the sociable learning environment and the opportunity to mix with postgraduate research students in their roles as Demonstrators. The work of the Laboratory Technicians is also highly valued and is **commended** by the review team.

Support for Taught Postgraduate Students

2.3.7. Outstanding all-round support is being provided for the School's taught postgraduate students, and the work of the Director of Postgraduate Teaching is **commended.** Students commented in particular on the input of the Director, the support provided by their project supervisors and the PGT Study Space, which has facilitated excellent cohort development.

Handbooks and Virtual Learning Environment

2.3.8. In reviewing documentation provided in advance of the review, the team identified some inconsistencies in programme and course handbooks, particularly in relation to interpretation of the University's Taught Assessment Regulations. It is **strongly recommended** that the School works towards developing standard templates for all programme and course handbooks and ensures that handbooks are a comprehensive source of information for students. Information that is applicable across all courses (for example, information about late penalties) should be provided in programme handbooks only, and assessment criteria specific to each assignment should be included in course handbooks.

2.3.9. Students also commented on inconsistencies in the Virtual Learning Environment, 'Learn'. The review team recognises that these should be addressed through the roll-out of the Learn Foundations Project in the School.

Chemical Physics

2.3.10. Chemical Physics students discussed timetabling and other general concerns relating to poor communication between the Schools of Chemistry and Physics. The review team noted that Chemistry has taken a lead in resolving this, but it remains a live issue of which Chemistry is asked to remain mindful.

Preparation for Dissertation Writing

2.3.11. Year Five students expressed concerns about being under-prepared for writing the dissertation. They stated that they would value being given more opportunities to develop writing skills in earlier years of their programmes. Having discussed the matter with the Director of Teaching, the review team is confident that students are being provided with opportunities to develop the required skills, but there would be value in making the link between these skills and the dissertation more explicit at the point of delivery and in course handbooks.

2.4. Listening and Responding to the Student Voice

2.4.1. Chemistry is **commended** for being highly responsive to the student voice: the School has a strong awareness of its shortcomings and is working hard to address these and to feed back to students on action taken.

2.4.2. High-quality, School-specific training is being provided for Chemistry's Programme Representatives to supplement the generic training provided by Edinburgh University Students' Association.

2.4.3. A new and positive approach to the operation of the Staff Student Liaison Committee has been adopted: where possible, more routine student concerns are dealt with in advance of meetings to allow the meetings themselves to have a more enhancement-related focus.

National Student Survey (NSS)

2.4.4. As also discussed in section 2.3 of this report, the review team has been unable to identify reasons for Chemistry's disappointing performance in the 2019 NSS. The team suggests that the School considers ways in which it might increase response rate to the survey. (Identifying successful practice in other Schools might be beneficial in this respect.) If the School were able to obtain qualitative in addition to quantitative feedback, it may gain further insight into students' concerns.

2.4.5. Chemistry has had particular concerns about its BSc students, based on disappointing overall NSS satisfaction scores. In response, the School has undertaken significant and **commendable** work this academic year to build greater cohort identity, provide tailored career development for these students, and ensure overall that choosing to undertake a BSc as opposed to an MChem is seen as a different, but not a lesser choice.

Feedback on Postgraduate Tutors and Demonstrators

2.4.6. While most students reported very positive experiences of the Postgraduate Tutor and Demonstrator systems, a small minority had experienced difficulties. Students in the later years know how to report issues, but those in earlier years of the programme are less sure. It is **recommended** that the School takes steps to ensure that all students know when and how to raise concerns about Postgraduate Tutors and Demonstrators. Introducing individualised feedback for Tutors and Demonstrators may be beneficial.

2.5. Accessibility, Inclusivity and Widening Participation

Equality and Diversity

2.5.1. The School's overall awareness of and approach to issues of equality and diversity is **commendable**. It has an active equality and diversity champion and a number of positive equality-related initiatives were discussed during the review visit including the development of gender-neutral toilets, name-badge education and Athena Swann accreditation.

2.5.2. Chemistry is **commended** for the low differentials seen in its degree results when these are broken down by gender and ethnic origin: between 2013/14 and 2017/18, 71% of BME students received a first class or 2:1 honours degree, while 75.6% of white students achieved this grade threshold. Considering gender, 75.1% of women and 74.3% of men achieved a first class or 2:1 degree over the period. These differentials between groups are amongst the lowest in the University.

2.5.3. The review team did note that a number of the social events organised by the School involve alcohol. It would encourage Chemistry to ensure that this is not discouraging some students from participating.

Widening Participation

2.5.4. The School has an extensive programme of outreach in place to promote widening participation. Students interviewed during the review felt that more could be done to support widening participation students once on programme, particularly around accessing hardship and bursary funding. The review team does however recognise that the University provides Schools with very limited information about its widening participation students and as such, they are not always easily identified for additional support.

2.5.5. It is suggested that Chemistry gives consideration to the issue of technological equity: students advised the review team that some of the software used by the School is only compatible with certain devices resulting in some students having to buy more than one device in order to complete course work. The School should ensure that all students can easily access the technology they need to engage fully with their programmes. This will be particularly important when the proposed 'Computational Thinking' course is launched.

2.6. Development of Employability and Graduate Attributes

2.6.1. 'Employability, skills and careers awareness' was Chemistry's second subject-specific remit item for the review, prompted by the fact that, while employment rates for the School's graduates are high and increasing (from 91.7% six years ago to 98.5% now), the percentage of graduates entering highly-skilled employment or further study is significantly lower and decreasing (from 86.1% 6 years ago to 82.4%).

2.6.2. The review team noted that these figures are not out of step with the rest of the sector. It also recognised that the School is doing a significant amount of high quality work to develop students' career awareness, transferable skills and employability. Some of this work is embedded within the curriculum, most notably at Masters' level. However much of the work – for example events organised by the Careers Service, individual careers support provided by Personal Tutors, and 'Chemistry: from Concept to Consumer' workshops - takes place outside of the core curriculum. As such, it is only accessed by the most engaged students and may be excluding students with work, caring or other commitments. The review team now **strongly recommends** that the School works towards embedding its skills and careers' development within the core curriculum. It should aim to put a clear framework in place across the 5 years of the undergraduate programmes that is easily recognised by students. This may involve removing subject-specific content from some courses and delivering and assessing in new ways, but the School is encouraged to be bold in this respect. Self-reflection on the part of students will be key to the success of this, and it is therefore further **recommended** that Chemistry introduces a mandatory, assessed reflective portfolio for Year 5 students, and more reflective elements in earlier years, perhaps using existing University and Royal Society of Chemistry toolkits.

2.6.3. The work of the Careers Service and Chemistry's Careers Consultant in particularly was discussed favourably by undergraduate students during the review and is **commended**. PGT students noted that they have received generic careers advice during their time in

Edinburgh, but would also value receiving advice that is more specific to the programmes they are undertaking.

2.7. Supporting and Developing Staff

2.7.1. As discussed in section 1, the School has facilitated leadership training for Academic and Professional Services staff which is **commended**.

Postgraduate Tutors and Demonstrators

2.7.2. The work being undertaken by the School's Senior Teaching Fellow to introduce pedagogical training for Postgraduate Demonstrators is **commendable.** At present the training has only been trialled amongst the Physical Chemistry Demonstrators, and those out with this group did express concerns about their preparedness for their roles during the review. It is therefore **recommended** that the pedagogical training is rolled out to all Postgraduate Tutors and Demonstrators as soon as is practicable. The School may also wish to build on this by introducing an in-house Edinburgh Teaching Award (EdTA) for Postgraduate Tutors and Demonstrators.

2.7.3. The review team spent some time discussing recruitment processes for the School's Tutors and Demonstrators. At present, an opt-out system operates under which it is assumed that all Postgraduate Research (PGR) students will tutor or demonstrate unless they advise the School otherwise. However, there is a lack of clarity around the system: the majority of the PGR students interviewed during the review were unaware that opting out was possible, and it was reported that some PGR students had not automatically been allocated tutoring or demonstrating responsibilities, possibly because they had started their programmes mid-year. Undergraduate students reported a small number of very negative experiences with Postgraduate Tutors or Demonstrators on account of them 'being forced to take on the roles'.

2.7.4. To tackle these issues, it is **recommended** that Chemistry takes steps to professionalise the Tutor and Demonstrator roles. It is proposed that a selective recruitment process is introduced for all prospective Tutors and Demonstrators that may include an interview prior to appointment. Once in post, Tutors and Demonstrators should be regarded as staff members, therefore allowing performance to be managed through the University's Human Resources policies and procedures.

2.7.5. It was noted during the review that Demonstrators do not feel they are always given sufficient, paid time to perform the experiment they are being asked to teach in advance of the class. It is **recommended** that Demonstrators are required to work through all pre-lab exercises and experiments in advance of classes, and that they are paid fully for their time.

2.7.6. The review highlighted some concerns about consistency of marking of assessed work and of laboratory reports in particular. Postgraduate Demonstrators noted that they are not routinely provided with detailed mark schemes for the work they are assessing, and therefore produce their own schemes. It is **strongly recommended** that the School produces detailed assessment criteria and marking rubrics for each assignment, and clear information about this should be published in course handbooks.

Academic Staff

2.7.7. There is currently some engagement amongst Academic Staff with the Edinburgh Teaching Award (EdTA) and the International Accreditation Association for Higher Education (AHE). This is **commended**.

2.7.8. As discussed in sections 2.1 and 2.2, Chemistry is being encouraged to diversify its approaches to teaching and assessment. Continual Professional Development (CPD) for the School's Academic Staff is likely to be key to this. The review team therefore **recommends** that the School sets more ambitious targets for EdTA participation and completion; continues to build on the work started through the Teaching Forum to discuss innovative approaches to teaching and learning and share best practice; and ensures that teaching-related CPD and activity is a key focus in Academic Staff annual review processes.

2.7.9. In principle, all School-level roles within Chemistry are 5 year, fixed term posts. It is **recommended** that Chemistry aims to adhere to this principle with teaching-related roles wherever possible to spread opportunities for staff development (also discussed in section 1 of the report).

2.8. Learning Environment (Physical and Virtual)

2.8.1. The review team was advised that, in the main, students enjoy the campus experience that being based at King's Buildings offers. This is particularly true in the later years when all teaching takes place in the Joseph Black Building. Teaching in earlier years is split between the Joseph Black Building and George Square due to a shortage of large lecture theatre space at Kings Buildings. However, this and other space-related issues should be addressed through the planned development of the 'KB Nucleus'.

2.8.2. As previously discussed, students greatly value the Social Space and PGT Study Space. They also appreciate greater availability of space and resources in the King's Buildings' Library as compared with the Main Library in George Square.

2.8.3. The School has ongoing concerns about the proposed removal of the University Shuttle Bus service. It does recognise that the KB Nucleus development will reduce the need for this service, but the review team **recommends** that the Shuttle Bus continues until the KB Nucleus is complete.

3. Assurance and Enhancement of Provision

3.1. The review team has overall confidence in Chemistry's academic standards and in the processes and procedures that are in place to assure and enhance these. As discussed in section 2.5.2, the level of achievement amongst minority groups is particularly impressive.

3.2. The School was recently reaccredited by the Royal Society of Chemistry (RSC)

3.3. It is **recommended** that Chemistry ensures that Course Organisers take full responsibility for all aspects of their course's assessment. This should include providing detailed assessment rubrics for all assessed work (also discussed in section 2.7.6) and training and overseeing all those involved in the marking and moderation processes.

3.4. The review team had some concern about the involvement of Personal Tutors in Boards of Examiners' discussions about students with Special Circumstances. In line with Regulation 42 of the Taught Assessment Regulations, it is **recommended** that Boards of Examiners' discussions and decisions about action to be taken for students with special circumstances are based only on the judgements provided by the Special Circumstances Committee.

Section C – Review Conclusions

Confidence Statement

The review team found that the School of Chemistry has effective management of the quality of the student learning experience, academic standards, and enhancement and good practice.

Prioritised Commendations and Recommendations

Key strengths and areas of positive practice for sharing more widely across the institution:

No	Commendation	Report Section
1	Recent investment in leadership training for Academic and Professional Services staff is **commended**.	1.1 & 2.7.1
2	The School has a **commendable** and globally recognised research reputation.	1.2
3	The recent appointment of a Marketing Manager is **commended**.	1.2
4	Chemistry's work since the 2014 internal review to streamline and enhance its portfolio of programmes is **commended**.	2.1.1
5	Recent changes made to Years 4 and 5 of Chemistry's undergraduate programmes are **commended**.	2.1.2
6	Chemistry's existing PGT programmes and PGT expansion plans are **commended**.	2.1.4
7	The planned introduction of a Year Two course in Computational Thinking is **commended**.	2.1.5
8	The School's laboratory programme, which facilitates excellent, progressive development of technical and research skills across the five years of the programme, is **commended**.	2.1.10
9	A reduction in the number of compulsory laboratory reports in Year Two to provide space to assess in alternative ways is **commended.**	2.2.2
10	The provision for PGT students of continuous feedback on the literature reviews they undertake is **commended**.	2.2.3
11	The sense of community within Chemistry is impressive and **commendable**.	2.3.2
12	The excellent, one to one relationship that exists between Personal Tutor and student under Chemistry's current Personal Tutor system is **commended**.	2.3.4
13	The administrative support provided by the Chemistry Teaching Organisation (CTO) is **commended**.	2.3.5
14	Chemistry's Laboratory Technicians are **commended**.	2.3.6
15	The work of the Director of Postgraduate Teaching is **commended**.	2.3.7
16	Chemistry is **commended** for being highly responsive to the student voice.	2.4.1
17	Work to enhance the BSc student experience is **commended**.	2.4.5
18	The School's overall awareness of and approach to issues of equality and diversity is **commendable.**	2.5.1
19	Chemistry is **commended** for the low differentials seen in its degree results when these are broken down by gender and ethnic origin.	2.5.2
20	The work of Chemistry's Careers Consultant is **commended**.	2.6.3
21	The pedagogical training that has been introduced for Postgraduate Demonstrators is **commended**.	2.7.2
22	Current engagement amongst Academic Staff with the Edinburgh Teaching Award (EdTA) and the International Accreditation Association for Higher Education (AHE) is **commended**.	2.7.7

Areas for further development:

Priority	Recommendation	Report Section	Responsibility
1	Curriculum: • It is strongly **recommended** that Chemistry gives careful consideration to the content of the Year Three curriculum. • It is strongly **recommended** that the School works towards embedding its skills and careers' development within the core curriculum, and that a mandatory, assessed reflective portfolio for Year Five students and more reflective elements for earlier years are introduced.	2.1.3 2.6.2	School
2	Supporting and Developing Staff • It is **recommended** that pedagogical training is rolled out for all Postgraduate Tutors and Demonstrators as soon as is practicable. • It is **recommended** that Chemistry takes steps to professionalise the Tutor and Demonstrator roles by introducing a selective recruitment process. Once in post, Tutors and Demonstrators should be regarded as University staff members. • It is **recommended** that Demonstrators are required to work through all pre-lab exercises and experiments in advance of teaching classes and that they are paid fully for their time. • It is strongly **recommended** that the School produces detailed assessment criteria and marking rubrics for each assignment, and clear information about this should be published in course handbooks. • The review team **recommends** that the School sets more ambitious targets for EdTA participation and completion; continues to build on the work started through the Teaching Forum to discuss innovative approaches to teaching and learning and share best practice; and ensures that teaching activity is a key focus in Academic Staff annual review processes.	2.7.2 2.7.4 2.7.5 2.7.6 2.7.8	School
3	Assessment and Feedback: • It is **recommended** that the School reviews the quantity and types of assessment used across all years. • It is **recommended** that the School develops a more systematic and explicit approach to providing formative feedback opportunities for all undergraduate courses. • It is **recommended** that Chemistry ensures that Course Organisers take full responsibility for all aspects of their course's assessment.	2.2.2 2.2.4 3.3	School

4	Teaching Delivery: • It is **recommended** that the School considers ways in which it might reduce its reliance on traditional lectures and diversify teaching approaches.	2.1.7	School
5	Student Support • It is **recommended** that the School considers ways in which elements of the one to one relationship between Personal Tutor and student that exists under the current model of student support is retained, whilst taking full advantage of the opportunities afforded by the enhanced Professional Services Student Experience Team that will exist under the University's new model. • It is strongly **recommended** that the School works towards developing standard templates for all programme and course handbooks and ensures that handbooks are a comprehensive source of information for students.	2.3.4 2.3.8	School
6	Student Voice • It is **recommended** that the School takes steps to ensure that all students know when and how to raise concerns about Postgraduate Tutors and Demonstrators.	2.4.6	School
7	Quality and Standards • It is **recommended** that Boards of Examiners' discussions and decisions about action to be taken for students with special circumstances are based only on the judgements provided by the Special Circumstances Committee.	3.4	School
8	Management • It is **recommended** that the School gives further consideration to succession planning for teaching-related roles and wherever possible, adheres to the principle that roles should be held for a fixed-term, five year period.	1.1 & 2.7.9	School
9	University Shuttle Bus • The review team **recommends** that the University Shuttle Bus service continues until the KB Nucleus development is complete.	2.8.3	Emma Crowther, University Transport & Parking Office

The University of Edinburgh
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Degree Programmes list

Provision delivered in collaboration with others, Transnational education, work-based provision and placements, Online learning, Continuing Professional Development (CPD), Postgraduate Professional Development (PPD), provision which provides only small volumes of credit, Joint/Dual Degrees, Massive Open Online Courses MOOCs (even if non-credit bearing). Please note that MOOCS are not recorded in EUCLID so won't appear in this report.

Current Programme	Programme Code	Type (UG/ PGT/PGR)	No of Students 2019/0	Notes
Chemical Physics (BSc Hons)	UTCHPHB	UG	8	CONTINUING PROGRAMME
Chemical Physics (MChemPhys)	UTCHPHM	UG		
Chemical Physics (MChemPhys)	UTCHPHYMCHEM	UG	40	NEW PROGRAMME
Chemical Physics with a Year Abroad (MChemPhys)	UTCHPHN	UG	2	
Chemical Physics with Industrial Experience (MChemPhys)	UTCHPIN	UG		
Chemistry (BSc Hons)	UTCHMTBBSCH	UG	89	NEW PROGRAMME
Chemistry (BSc Hons)	UTCMSTB	UG	8	
Chemistry (MChem)	UTCHEMYMCHEM	UG	234	NEW PROGRAMME
Chemistry (MChem)	UTCMSTM	UG	10	
Chemistry with a Year Abroad (MChem)	UTCMYRA	UG	8	
Chemistry with Environmental and Sustainable Chemistry and a Year Abroad (MChem)	UTCMECA	UG	1	
Chemistry with Environmental and Sustainable Chemistry and Industrial Experience (MChem)	UTCMECI	UG	3	
Chemistry with Environmental and Sustainable Chemistry (BSc Hons)	UTCMECB	UG	2	
Chemistry with Environmental and Sustainable Chemistry (MChem)	UTCMECM	UG		
Chemistry with Industrial Experience (MChem)	UTCMSIE	UG	7	
Chemistry with Materials Chemistry and Industrial Experience (MChem)	UTCMSMI	UG	3	
Chemistry with Materials Chemistry (BSc Hons)	UTCMMCB	UG	1	
Chemistry with Materials Chemistry (MChem)	UTCMMCM	UG	2	
Chemistry with Materials Chemistry with a YearAbroad (MChem)	UTCMSMA	UG		
Materials Chemistry (MSc)	PTMSCMACHE1F	PGT	5	
Medicinal and Biological Chemistry (BSc Hons)	UTMDBCB	UG	26	CONTINUING PROGRAMME
Medicinal and Biological Chemistry (MChem)	UTMDBCM	UG	9	
Medicinal and Biological Chemistry (MChem)	UTMDBIOMCHEM	UG	77	NEW PROGRAMME
Medicinal and Biological Chemistry (MSc)	PTMSCMEDCH1F	PGT	6	
Medicinal and Biological Chemistry with a Year Abroad (MChem)	UTMDBCN	UG	4	
Medicinal and Biological Chemistry with Industrial Experience (MChem)	UTMDBCI	UG	2	
Visiting Research in CHE - 4 months	VSNGUCHEVP1F	UG		
Visiting UG Student in Chem - FY (ICL)	VSCRDCHEMY1P	UG		

Course information list

All credit bearing provision must be included within the scope of the review, including:
Provision delivered in collaboration with others, Transnational education, Work-based provision and placements, Online and distance learning, Continuing Professional Development (CPD), Postgraduate Professional Development (PPD), Provision which provides only small volumes of credit, Joint/Dual Degrees, Massive Open Online Courses MOOCs (even if non-credit bearing)

Course Name	Course Code (EUCLID)	Course Level (SCQF)	Credits	Shared with PGT/UG	Semester	No of Students 2019/0	Notes (e.g. reason for course not running)
Biological Chemistry 1A	CHEM08022	08	20		Semester 1	388	
Biological Chemistry 1B	CHEM08023	08	20		Semester 2	385	
Chemistry 1A	CHEM08016	08	20		Semester 1	143	
Chemistry 1B	CHEM08017	08	20		Semester 2	142	
Chemistry 2	CHEM08019	08	40		Full Year	145	
Chemistry 2A	CHEM08026	08	20		Semester 1	1	For Visiting students only
Chemistry 2B	CHEM08027	08	20		Semester 2	1	For Visiting students only
Chemistry for Chemical Engineers 1A	CHEM08028	08	20		Semester 1	70	
Chemistry for Chemical Engineers 1B	CHEM08029	08	20		Semester 2	70	
Chemistry for Life Sciences 2	SCBI08003	08	20		Semester 1	56	
Chemistry for Life Sciences (PGT)	CHEM08024	08	20		Semester 1	0	
Environmental Chemistry 2	CHEM08020	08	20		Semester 2	56	
Materials Chemistry 2	CHEM08021	08	20		Semester 1	47	
Materials Chemistry (PGT)	CHEM08025	08	20		Semester 1	17	
Chemical Physics 3S1	CHPH09007	09	20		Semester 1	12	
Chemical Physics 3S2	CHPH09006	09	20		Semester 2	12	
Chemistry 3A	CHEM09005	09	40		Full Year	151	
Chemistry 3A (VS1)	CHEM09008	09	20		Semester 1	9	For Visiting students only
Chemistry 3A (VS2)	CHEM09010	09	20		Semester 2	0	For Visiting students only
Chemistry 3B	CHEM09006	09	40		Full Year	149	
Chemistry 3B (VS1)	CHEM09009	09	20		Semester 1	6	For Visiting students only
Chemistry 3B (VS2)	CHEM09011	09	20		Semester 2	0	For Visiting students only
Chemistry 3P Practical and Transferable Skills	CHEM09007	09	40		Full Year	149	
Chemistry 3 Semester 1 Project (VS1)	CHEM09015	09	20		Semester 1	2	For Visiting students only
Chemistry 3 Semester 2 Project (VS2)	CHEM09016	09	20		Semester 2	0	For Visiting students only
Chemistry 3 Summer/Semester 1 Project (VS1)	CHEM09012	09	20		Semester 1	0	For Visiting students only
CP3 Physical Chemistry Laboratory	CHPH09005	09	10		Full Year	12	
Advanced Inorganic Chemistry	CHEM10055	10	20		Semester 2	11	
Advanced Organic Chemistry	CHEM10057	10	20		Semester 1	22	
Advanced Physical Chemistry	CHEM10056	10	20		Semester 1	19	
Analytical Chemistry Level 10	CHEM10012	10	20		Semester 1	20	
Biomacromolecules Level 10	CHEM10051	10	20		Semester 1	17	
Biophysical Chemistry Level 10	CHEM10014	10	20		Semester 2	11	
BSc Chemistry Research Project/Transferable Skills Course	CHEM10043	10	40		Full Year	34	
BSc ChemPhys Research Project/Transferable Skills Course	CHPH10004	10	40		Full Year	2	
Chemical Medicine Level 10	CHEM10052	10	20		Semester 2	16	
Chemical Physics 4P	CHPH10005	10	20		Semester 1	8	
Chemistry 4P (Semester 1)	CHEM10053	10	20		Semester 1	14	

Chemistry 4P (Semester 2)	CHEM10054	10	20		Semester 2	1	
Chemistry of Functional Materials Level 10	CHEM10041	10	20		Semester 2	14	
Properties and Reactions of Matter Level 10	CHEM10021	10	20		Semester 1	1	
Science Education Placement: Chemistry (40 credits)	CHEM10044	10	40		Full Year	10	
Sustainable Chemistry Level 10	CHEM10023	10	20		Semester 2	13	
Synthetic Organic Chemistry Level 10	CHEM10024	10	20		Semester 1	1	
Visiting Student Year 4 Semester 2 Project	CHEM10050	10	60		Semester 2	1	
Advanced Inorganic Chemistry	CHEM11063	11	20		Semester 2	62	
Advanced Organic Chemistry	CHEM11064	11	20		Semester 1	42	
Advanced Physical Chemistry	CHEM11065	11	20		Semester 1	52	
Advanced Topics in Chemical Physics	CHPH11004	11	20		Full Year	8	
Analytical Chemistry Level 11	CHEM11014	11	20		Semester 1	40	
Biomacromolecules Level 11	CHEM11043	11	20		Semester 1	33	
Biomacromolecules PGT	CHEM11059	11	20		Semester 1	15	
Biophysical Chemistry Level 11	CHEM11016	11	20		Semester 2	34	
Biophysical Chemistry PGT	CHEM11061	11	20		Semester 2	16	
Chemical Medicine Level 11	CHEM11044	11	20		Semester 2	51	
Chemistry/Chemical Physics Industrial Research Project	CHEM11056	11	120		Full Year	30	
Chemistry/Chemical Physics International Research Project	CHEM11054	11	120		Full Year	38	
Chemistry/Chemical Physics Research Project	CHEM11055	11	120		Full Year	25	
Chemistry of Functional Materials Level 11	CHEM11037	11	20		Semester 2	37	
Chemistry of Functional Materials PGT	CHEM11060	11	20		Semester 2	17	
Concepts and Techniques in Bioanalytical Chemistry Level 11	CHEM11045	11	20		Semester 1	0	
MChemX Research Project	CHEM11029	11	20		Full Year	7	
MSc Dissertation in Chemistry (180 credits)	CHEM11011	11	180		Full Year	0	
MSc Dissertation in Chemistry (60 credits)	CHEM11013	11	60		Block 5 (Sem 2) and beyond	33	
MSc Research Methods	CHEM11012	11	40		Full Year	33	
Research Methods in Integrated Sensing and Measurement	CHEM11052	11	20		Semester 2	0	
Sustainable Chemistry Level 11	CHEM11025	11	20		Semester 2	38	

Appendix 2

The University of Edinburgh

Internal Periodic Review: University Remit 2019/20

The University remit provides consistent coverage of key elements across all of the University's internal reviews (undergraduate and postgraduate).

It covers all credit bearing provision within the scope of the review, including:

- Provision delivered in collaboration with others
- Transnational education
- Work-based provision and placements
- Online and distance learning
- Continuing Professional Development (CPD)
- Postgraduate Professional Development (PPD)
- Provision which provides only small volumes of credit
- Joint/Dual Degrees
- Massive Open Online Courses MOOCs (even if non-credit bearing)

Under each of the headings, the Reflective Report should highlight areas of good practice as well as areas for further development and action planned.

1. **Strategic overview**
   The strategic approach to:

   - The management and resourcing of learning and teaching experience,
   - The forward direction and the structures in place to support this.
   - Developing business cases for new programmes and courses,
   - Managing and reviewing its portfolio,
   - Closing courses and programmes.

2. **Enhancing the Student Experience**
   The approach to and effectiveness of:

   - Supporting students in their learning
   - Listening to and responding to the Student Voice
   - Learning and Teaching
   - Assessment and Feedback
   - Accessibility, Inclusivity and Widening Participation
   - Learning environment (physical and virtual)
   - Development of Employability and Graduate Attributes
   - Supporting and developing staff

3. **Assurance and Enhancement of provision**
   The approach to and effectiveness of maintaining and enhancing academic standards and quality of provision in alignment with the University Quality Framework:

   - Admissions and Recruitment
   - Assessment, Progression and Achievement
   - Programme and Course approval
   - Annual Monitoring, Review and Reporting
   - Operation of Boards of Studies, Exam Boards, Special Circumstances
   - External Examining, themes and actions taken
   - Alignment with SCQF (Scottish Credit and Qualifications Framework) level, relevant benchmark statements, UK Quality Code
   - Accreditation and Collaborative activity and relationship with Professional/Accrediting bodies (if applicable)

Internal Periodic Review of Chemistry 2019/20

Remit Meeting

Subject Specific Remit Items

Introduction

The School has considered at length what the remit items for the IPR should be. Consultation has involved senior management, teaching staff, students, and been informed by University strategy and available data.

Context

The School has made significant changes over the last five years as part of the restructuring of the MChem degrees (and consequent changes to the teaching of final year BSc courses and taught postgraduate courses). This has incorporated significant changes to the laboratory curriculum with the progression from Years 1 to 5 substantially aligned. This has involved significant infrastructural and pedagogic investment to develop a new Year 4 group project course (in a purpose built laboratory) linking together the early years of the laboratory curriculum with the research project, now in Year 5 for all undergraduate masters students.

At the same time, the School is investing strategically in the expansion of its taught postgraduate provision, with the incorporation of a marketing campaign to increase numbers of students on current courses (which has had a successful first year result) and the appointment of a new Director of Postgraduate Teaching. These increased numbers will increase the possibilities for these taught postgraduate courses to disconnect from some of the undergraduate courses, with the viability of courses for PGT students only increasing. This is an ongoing strategic development.

Therefore, with substantial curriculum development underway and in process, we wish to wait for these to bed down before we subject issues emerging to a review (beyond the usual scope of their review within the University Remit). Instead we wish to turn our attention to more subtle issues emerging, that we consider, based on the data available, are important enough to warrant being specific remit items for the IPR Panel, as discussions about these items will have significant impact on the experience of students while they are in Edinburgh and on their professional life post-graduation.

Proposed Remit Items

For reasons we elaborate below, we propose that the remit items for the IPR are:

1. **Employability Skills and Career Awareness**
2. **Supporting a Student Learning Community**

The rationale for these proposed items are discussed below.

Michael Seery

Remit Item 1: Employability Skills and Career Awareness

The School has incorporated a significant amount of resources and activities into developing students' employability skills and career awareness. These include the incorporation of transferable skills into various aspects of our courses, working hard to support our Careers Officer and her interactions with students, which include career advice and mock interviews, and developing a range of career awareness activities, including a very impressive series of activities under the heading of "*Chemistry from Concept to Consumer*", which aims to illustrate how chemistry is applied in industrial and commercial settings, with talks from industrial partners. There is also lots of informal effort relating to helping students prepare their CVs and cover letters (usually through the Personal Tutor system). Of course, as students complete Year 5, they are already taking their first career steps, albeit within a supported and structured environment.

Apart from the incorporation of professional skills into courses, most of this activity is what is termed "co-curricular", running alongside curriculum delivery, and therefore is available and useful to students who engage with it. Given the extent of effort that is invested, we wish to take a critical look at this effort, and explore options as to how we might integrate it into our programmes, and the feasibility of any such integration (noting that chemistry students are usually exceptionally busy with course work). We believe an external insight would be very beneficial to us in this regard.

Aside from a desire within the School to explore the expanded incorporation of these skills in the curriculum, there is rationale from outside sources. The panel to the left outlines the evidence sources underpinning this remit item.

Factors Underpinning Consideration of Remit Item 1

University Learning and Teaching Strategy

*"Learning experiences that equip students for whatever path they follow once they graduate, including... **greater integration of graduate attributes and employ-ability in all programmes**"*

NSS Scores 2019 – "*Helped me plan for my future career*"

Chemistry: 68.1% **University: 71.4%**

(PTES 2019 only had 9 responses and therefore data is not available for PGT)

Extract from Graduate Destinations Report (for 2011/12 – 2016/17)

Undergraduate:

"Over the last 6 years, the percentage of chemistry graduates in Employment or Further Study (EFS) has increased from 91.7% to 98.5%. Taken in isolation, this is positive. However, the corresponding percentage in Highly-Skilled Employment (ie graduate level) or Further Study (HSEFS) has decreased from 86.1% to 82.4%, and may require close monitoring in future years."

Taught Postgraduate:

"The taught MSc [courses] provide a good launchpad into both industry and PhD study. The numbers on the course are low and the majority of the students on the course are international. The destination data is therefore sparse (50% return). Despite this, it is encouraging to see that the graduates enter scientific (Convatec, Pfizer, Sociable Pharma, Orient Pharma), financial (China People's Insurance) and teaching roles, as well as going on to PhD positions in the universities of Edinburgh, Southampton, Cardiff, Heriot-Watt and St Andrews…[in 2016/17, 100% of graduates entered HSEFS]"

Student Survey on Remit Items (n = 36, choose 2 items)

Accessibility, inclusivity, and widening participation (reviewing who is able to engage in our programmes and how we can support diversity of learners)	22%	Consider in University Remit
Learning environment (reviewing arrangements for teaching and learning, including lectures, labs, and tutorials, and the use of LEARN)	69%	Consider in University Remit
Employability (reviewing how we embed career awareness into the curriculum and inform and prepare students for employment)	36%	Subject Remit
Laboratory Teaching (reviewing how we develop laboratory skills and competencies over the programme)	42%	Consider in University Remit
Student engagement (reviewing how we foster a learning community)	39%	Subject Remit

Remit Item 2: Supporting a Student Learning Community

The School has a long tradition of student support and engagement, and it is something that is regularly commented upon by external examiners and visitors, graduates, and students themselves. The School has invested in physical infrastructure (the Social Space) and supports student-led initiatives such as Academic Families, Chemunity, and the Chemical Society. The PT system in the School is considered one of the best in the university, and the School has a pro-active equality and diversity committee. Feedback at staff-student liaison committees is generally sanguine and has improved markedly over recent years with the changes to the laboratory programme. In many ways, we are a "happy" school with a well-embedded sense of community.

Each year we receive NSS scores, and another reality emerges! None of the issues flagged in NSS responses appear to emerge on the ground during the year and we are at a loss to explain some of them. Our PT satisfaction score dropped markedly in the last NSS. Lack of commentary in the current year (low number of responses) means we have no help from text-based comments to explore what is going on.

What is emerging then is a sense that there are multiple realities reflecting multiple experiences within the School. Satisfaction on MChem programmes is around 90%, while satisfaction for BSc programmes is about 60%. Increasing numbers of PGT students will mean we will need to think about how we include these students in our learning community. We look to the IPR Panel to assist us in this regard. Some data to support this remit item are shown in the panel.

Factors Underpinning Consideration of Remit Item 2

University Learning and Teaching Strategy
"We will nurture a learning community that supports students by... *supporting our academic units to build a strong sense of community for both staff and students*"

NSS Scores 2019 – "*Overall Satisfaction*"
Chemistry: 81.3% **University: 71.4%**
MChem Courses 90-91% **BSc Course 60%**
(PTES 2019 only had 9 responses and therefore data is not available for PGT)

Extract from School QA Report 2019

On Learning Community
"The School has found it difficult to understand why the NSS Learning Community score dropped so suddenly and has continued to decline this year. There are no obvious reasons for this in student feedback. To add to our concerns, there were significant declines this year in Academic Support (-13.5%) and Personal Tutor satisfaction (-19%). Overall satisfaction declined to 81.3% after being at 90% in 2017. Delving deeper into the data shows that Academic Support and Learning Community have fallen most dramatically for the MChem year abroad students, whereas the Academic Support score improved to 83.3% for BSc(Hons) students. Conversely, overall satisfaction was 90% for the MChem Year Abroad students, but only 60% for BSc (Hons) students."

On issues relating to particular cohorts of students
"This year the NSS results confirmed the relative dissatisfaction of the BSc students. While the MChem programmes achieved overall satisfaction levels of between 90 and 91%, the corresponding BSc(Hons) number was 60%. This brings our school-wide rating down to the headline figure of 81%. Given that 39% of the 2018-19 1st year intake are registered for a BSc degree (see earlier), the challenge to the School is to investigate why the BSc(Hons) students are having a relatively less enjoyable and productive time at University."

Student Survey on Remit Items (n = 36, choose 2 items)

Accessibility, inclusivity, and widening participation (reviewing who is able to engage in our programmes and how we can support diversity of learners)	22%	Consider in University Remit
Learning environment (reviewing arrangements for teaching and learning, including lectures, labs, and tutorials, and the use of LEARN)	69%	Consider in University Remit
Employability (reviewing how we embed career awareness into the curriculum and inform and prepare students for employment)	36%	Subject Remit
Laboratory Teaching (reviewing how we develop laboratory skills and competencies over the programme)	42%	Consider in University Remit
Student engagement (reviewing how we foster a learning community)	39%	Subject Remit

Appendix 4

List of documentation (available before review)

Reflective Report

Accreditation Reports :
Royal Society of Chemistry - not available until after 17 March 2020
The Institute of Physics

School Quality Assurance Reports:

External Examiners Summary reports:

School organisation chart

School committees related to teaching

Current Subject Area staff information

Programme Handbooks:

Programme specification information:

Statistical data:

Applications, progression and performance data:
Applications by Year of Entry
Offers by Year of Entry
Ratio of Offers to Applications by Year of Entry
Acceptance by Year of Entry
Percentage of High Classification Awards
Completion rate of entrants 4 year UG
Completion rate of entrants 5 year UG
Completion rate of entrants PGT
Progression report UG
Progression report PGT
Course results UG
Course results PGT
Students Studying Abroad
Equality and Diversity Student Report
School Background Data for First Destination Statistics (DHLE Survey) UG
School Background Data for First Destination Statistics (DHLE Survey) PG

National Student Survey (NSS) results 2018-2019

Postgraduate Taught Experience Survey (PTES) results

Student Staff Liaison Committee meeting minutes (previous academic year)

University of Edinburgh Standard Remit 2019/20

Subject Specific Remit

Edinburgh University Students' Association School Report

Appendix 5

Internal Periodic Review of Chemistry 2019/20

Additional Material Considered during the Review Visit

- Chemistry School Plan 2018/19 – 2021/22
- Widening Participation and Outreach Timeline 2020

Appendix 6

Student Numbers

Entrants by Qualification and Programme, by entry session and mode of study

	2015/6	2015/6	2016/7	2016/7	2017/8	2017/8	2018/9	2018/9	2019/0	2019/0
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Non-Graduating Undergraduate in Full Year Courses for Visiting Students	6		1		3		9		6	
Non-Graduating Undergraduate in Semester 1 Courses for Visiting Students		18		16		26		17		8
Non-Graduating Undergraduate in Semester 2 Courses for Visiting Students		14		13		15		13		
TOTAL	**6**	**32**	**1**	**29**	**3**	**41**	**9**	**30**	**6**	**8**

Undergraduate Taught

	2015/6	2016/7	2017/8	2018/9	2019/0
	FT	FT	FT	FT	FT
BSc (Hons) (Chem) in Chemical Physics	1	1	3	4	7
BSc (Hons) (Chem) in Chemistry	28	37	35	51	38
BSc (Hons) (Chem) in Chemistry with Environmental and Sustainable Chemistry		6	4		
BSc (Hons) (Chem) in Chemistry with Materials Chemistry	4	1	2		
BSc (Hons) (Chem) in Medicinal and Biological Chemistry	10	7	6	16	20
MChem (Hons) in Chemistry	30	41	31	51	50
MChem (Hons) in Chemistry with a Year Abroad	12	11	10		
MChem (Hons) in Chemistry with Environmental and Sustainable Chemistry		1	2		
MChem (Hons) in Chemistry with Environmental and Sustainable Chemistry and a Year Abroad	2	1	4		
MChem (Hons) in Chemistry with Environmental and Sustainable Chemistry and Industrial Experience	4	3	4		
MChem (Hons) in Chemistry with Industrial Experience	12	13	15		
MChem (Hons) in Chemistry with Materials Chemistry	3	1	2		
MChem (Hons) in Chemistry with Materials Chemistry and Industrial Experience	3	4	4		
MChem (Hons) in Chemistry with Materials Chemistry with a Year Abroad		1	1		
MChem (Hons) in Medicinal and Biological Chemistry	7	4	12	24	18
MChem (Hons) in Medicinal and Biological Chemistry with a Year Abroad	10	4	9		
MChem (Hons) in Medicinal and Biological Chemistry with Industrial Experience	8	9	6		
MChemPhys (Hons) in Chemical Physics	8	7	3	15	14
MChemPhys (Hons) in Chemical Physics with a Year Abroad	5	1	4		
MChemPhys (Hons) in Chemical Physics with Industrial Experience	3	4	4		
TOTAL	**150**	**157**	**161**	**161**	**147**

Entrants by Qualification and Programme, by entry session and mode of study

Postgraduate Taught

	2015/6	2016/7	2016/7	2017/8	2018/9	2019/0
	FT	FT	PT	FT	FT	FT
MSc in Materials Chemistry	5	7		7	5	21
MSc in Medicinal and Biological Chemistry	2	6		13	6	12
PgCert in Computational Chemistry and Modelling			2			
TOTAL	**7**	**13**	**2**	**20**	**11**	**33**