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**Programme Specification**

**Title of Course:** MChem (Hons) Chemistry

MChem (Hons) Chemistry with International Exchange

**Date Specification Produced:** September 2012

**Date Specification Last Revised:** July 2022

This Programme Specification is designed for prospective students, current students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content of each module can be found in Student Handbooks and Module Descriptors.

**SECTION 1: GENERAL INFORMATION**

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| **Title:** | MChem (Hons) Chemistry |
| **Awarding Institution:** | Kingston University, London |
| **Teaching Institution:** | Kingston University, London |
| **Location:** | Penrhyn Road |
| **Programme Accredited by:** | N/A |

**SECTION 2: THE PROGRAMME**

1. **Programme Introduction**

Chemistry is a fundamental science which has a huge impact on our day to day lives. It has led to the development of many of the things taken for granted by society, for example medicines, modern materials, paints, fuels and many of the foods that we eat. The chemical industry in the UK is an extremely important sector of the economy. Recent figures from the Society of Chemical Industries suggest that the annual turnover of this sector is around £60bn, contributing £30m to the balance of payments every day – and with some 600 000 jobs dependent on it. The modern chemical industry is high tech and produces high quality and high value products. At the same time, it is an area that faces enormous challenges in a rapidly changing world ranging from constraints related to supply of raw materials, changing demands by society and increasing environmental pressure. The modern chemist thus has to be flexible, innovative and ready to meet these ever changing challenges, particularly those encountered at the interfaces of chemistry with other disciplines.

Chemistry at Kingston is offered as a three year BSc programme, or alternatively (and subject to a higher level of academic achievement in the second year) as a four year MChem programme. As the first two years of the course are identical, the decisions about how to continue after that do not have to be made at the outset of the course, but can be considered carefully over the first two years of study. Both versions of the course have been designed to educate and create the chemists of the future, irrespective of whether they choose to continue in an academic or in a more applied or commercial environment. We sounded out employers via our Industrial Liaison Group and took their views into account when building the course, as well as considering what elements would be expected in a strong, traditional chemistry degree, incorporating guidelines indicated by the Royal Society of Chemistry.

The resulting MChem programme gives students a solid grounding in the three core areas of chemistry (inorganic, organic & physical), at the same time as supporting these with experience in experimental and analytical chemistry. Breadth is provided by introducing environmental and medicinal chemistry in the first two years of the course, followed by opportunities to study materials and industrial chemistry, particularly aspects of sustainability, in the third year. A research-based project also forms an important 50% of the final year and gives students a means of pursuing their own interests (with staff guidance) at a more advanced level.

Knowledge and understanding of the field will be developed from level to level. Level 4 consolidates and builds upon material learnt before entering the course, in particular, that covered at A level, or equivalent. It provides a solid foundation in chemistry, mathematics, computing skills and experimental techniques required for safe laboratory work in support of the theory parts of the course. It also introduces breadth through study of environmental chemistry. A centerpiece of the Level 4 activities is the Academic Skills for Molecular Sciences module, which exposes students to a wide variety of transferable, key and employability skills.

Level 5 develops students’ knowledge of the core areas of chemistry and expands those into areas of medicinal chemistry and a more detailed study of analytical and experimental chemistry. They will also gain experience of research methods and skills at this level, in preparation for project work in the final year of the course.

Level 6 introduces the chance to study Advanced Materials and Industrial Chemistry in addition to the core organic, inorganic, physical and analytical chemistry. The material on Advanced Materials and Industrial Chemistry gives students an opportunity to study the workings of the modern chemical industry. These include aspects and applications of nanochemistry and heterogeneous catalysis, intellectual property criteria including patents and licensing, as well an introduction to Green Chemistry, explaining how modern chemical processes are being adapted in ways to reduce the impact on the environment and improve sustainability. Polymer Chemistry introduces students to areas where chemistry interfaces with other disciplines in the preparation and application of novel materials with a range of important structural and electronic applications.

A research-based project forms an important part of the final year (50%). It provides an important opportunity for students to discover more for themselves about specific areas of chemistry, working under the supervision of academic staff pursuing their research interests and specialisms. Apart from furthering their knowledge of more specific topics, this project provides students with experience in literature searching and reporting the results of their research, verbally and in writing.

The programme also helps develop employment-ready students through an integrated industrial experience in the form of a work placement on the two year version of the programme.

This integrated placement provides students with an exciting opportunity to apply and develop their knowledge and skills in a real-world setting, which enables them to develop their self-confidence. Students undertaking such placement activities are in a stronger position to gain the skills and experience that employers desire today.

Students have the option of studying abroad in their third year and are also actively encouraged to apply for 12 month industrial placements between their second and third years. Placements in recent years have ranged from the large pharmaceutical companies based in the UK, to a variety of SMEs, as well as a number working in the NHS and other research organizations.

The course prepares students well for employment through the core material related to the degree title, through the broad range of keys skills encountered during the degree and specifically through the placement experience where this has been undertaken. As indicated, we have considered the needs of the chemical industry through the input provided to us by our industrial contacts. In addition, graduates of this course are well prepared for further study or careers in other, non-chemistry areas or finally in teaching, following post-graduate training. A number choose to go down this route each year.

1. **Aims of the Programme**

The main aims of the field taken by MChem students are:

· to provide students who take the Chemistry field with a broad knowledge of chemistry including applied aspects, plus depth in the main branches of the subject (organic, inorganic, physical and analytical chemistry)

· to provide exposure to other areas of the subject, such as environmental, medicinal and materials chemistry, and to permit some degree of specialisation within these areas

· to develop subject related practical skills

· to enable students to develop their skills in independent study using both primary and secondary literature sources

· to provide students with the opportunity to develop their written and oral communication skills

· to prepare students for graduate employment (subject related or otherwise) or further study (either taught or by research) by developing their intellectual, problem solving, analytical and key (transferable) skills.

· to enable students to acquire the skills and methodologies for undertaking an original research programme, including modern literature searching techniques, critical analysis of data and report presentation

· to provide students with the opportunity to study topics within chemistry that will prepare them for future roles as professional chemists in both greater breadth and depth than via a BSc course

• Give students on the 2 year version an opportunity to develop further skills, preparing them for higher levels of employment

1. **Intended Learning Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the QAA subject benchmarks for chemistry and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

The programme provides opportunities for students to develop and demonstrate knowledge and understanding specific to the subject, key skills and graduate attributes in the following areas. The programme outcomes are referenced to the QAA subject benchmarks for master’s level Chemistry (2014) and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

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| **Programme Learning Outcomes** | | | | | |
|  | **Knowledge and Understanding**  **On completion of the course students will have knowledge and understanding of:** |  | **Intellectual skills – able to:**  **On completion of the course students will be able to:** |  | **Subject Practical skills**  **On completion of the course students will be able to:** |
| A1 | The three core branches of chemistry (inorganic, organic & physical) at an advanced level | B1 | Critically analyse and appraise primary and secondary sources of information, where necessary using multiple sources of information | C1 | Carry out preparative and analytical (both qualitative and quantitative) laboratory work in the main branches of chemistry |
| A2 | Experimental & analytical chemistry, including aspects of separation science and spectroscopy | B2 | Solve complex problems both in aspects of chemistry and the supporting numerical areas | C2 | Report on and draw conclusions from the results of laboratory work |
| A3 | Applied areas of chemistry (environmental, medicinal, materials and industrial), especially those that are related to the chemical industry | B3 | Propose, carry out and report the results of an individual research project, including reviewing and evaluating the work of others in a subject | C3 | Plan a an extended programme of laboratory work and carry out a safety assessment for it |
| A4 | The numerical and computational skills necessary for working in science | B4 | Demonstrate the ability to work and study in an independent manner | C4 | Use a range of complex instrumentation and understand the technical basis for it |
| A5 | The skills and methodologies required for undertaking an original research programme |  |  |  |  |

| **Key Skills** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | **Self Awareness Skills** |  | **Communication Skills** |  | **Interpersonal Skills** |
| AK1 | Take responsibility for own learning and plan for and record own personal development | BK1 | Express ideas clearly and unambiguously in writing and the spoken work | CK1 | Work well with others in a group or team |
| AK2 | Recognise own academic strengths and weaknesses, reflect on performance and progress and respond to feedback | BK2 | Present, challenge and defend ideas and results effectively orally and in writing | CK2 | Work flexibly and respond to change |
| AK3 | Organise self effectively, agreeing and setting realistic targets, accessing support where appropriate and managing time to achieve targets | BK3 | Actively listen and respond appropriately to ideas of others | CK3 | Discuss and debate with others and make concession to reach agreement |
| AK4 | Work effectively with limited supervision in unfamiliar contexts |  |  | CK4 | Give, accept and respond to constructive feedback |
|  | **Research and information Literacy Skills** |  | **Numeracy Skills** |  | **Management & Leadership Skills** |
| DK1 | Search for and select relevant sources of information | EK1 | Collect data from primary and secondary sources and use appropriate methods to manipulate and analyse this data | FK1 | Determine the scope of a task (or project) |
| DK2 | Critically evaluate information and use it appropriately | EK2 | Present and record data in appropriate formats | FK2 | Identify resources needed to undertake the task (or project) and to schedule and manage the resources |
| DK3 | Apply the ethical and legal requirements in both the access and use of information | EK3 | Interpret and evaluate data to inform and justify arguments | FK3 | Evidence ability to successfully complete and evaluate a task (or project), revising the plan where necessary |
| DK4 | Accurately cite and reference information sources | EK4 | Be aware of issues of selection, accuracy and uncertainty in the collection and analysis of data | FK4 | Motivate and direct others to enable an effective contribution from all participants |
| DK5 | Use software and IT technology as appropriate |  |  |  |  |
|  | **Creativity and Problem Solving Skills** |  |  |  |  |
| GK1 | Apply scientific and other knowledge to analyse and evaluate information and data and to find solutions to problems |  |  |  |  |
| GK2 | Work with complex ideas and justify judgements made through effective use of evidence |  |  |  |  |

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| **Teaching/learning methods and strategies** | |
| The range of learning and teaching strategies includes:  · formal lectures  · workshops  · problem solving classes  · practical (laboratory) classes, including demonstrations of instrumentation and techniques  · independent learning from guided texts and work books (blended learning)  · case studies  · independent research projects | |
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| **Assessment strategies** | |
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| The assessment strategies employed in the Fields include the following:  · unseen examinations  · open book tests  · multiple choice tests  · practical reports  · keeping a laboratory notebook  · individual & group presentations  · literature surveys  · poster presentations  · project reports | |
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1. **Entry Requirements**

The minimum entry qualifications for the programme are:

Points: minimum 112, depending on qualifications

Units: to include two science A-levels or equivalent

Subjects:

* A-level: A2 Chemistry minimum grade C and one other science subject (second science can be Biology, Physics or Maths) General Studies and Critical Thinking not accepted.
* BTEC Diploma/Extended Diploma in Applied Science (Chemistry) only must have merits in the following units:

Unit 1 : "Principles and Applications in Science 1"

Unit 5: "Principles and Applications in Science 2"

Unit 13: "Applications of Inorganic Chemistry"

Unit 14: "Applications of Organic Chemistry"

* Plus GCSE Candidates are normally required to hold five GCSE subjects grades A-C including Mathematics and English Language (or comparable numeric score under the newly reformed GCSE grading).

A minimum overall IELTS score of 6.0 or equivalent is required for those for whom English is not their first language.

1. **Programme Structure**

This programme is offered in full-time/part-time mode, and leads to the award of MChem (Hons) Chemistry. Entry is normally at level 4 with A-level or equivalent qualifications (See section D). Transfer from a similar programme is possible at level 5 with passes in comparable level 4 modules – but is at the discretion of the course team. Intake is normally in September.

**E1. Professional and Statutory Regulatory Bodies**

Royal Society of Chemistry

**E2. Work-based learning, including sandwich programmes**

Work placements are actively encouraged. It is the responsibility of individual students to source and secure such placements, though help and advice is given by academic and administrative staff in the Faculty. This allows students to reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice.

The 2-year version of the programme is designed to include work-based learning through assessments and the reflective report. Many of the students on the programme are already working and they can use that experience to relate to theoretical concepts and to evaluate the relationship between theory and practice.

While it is the responsibility of individual students to secure such placements, the Careers and Employability Service support offers each student support at all stages of the application process, including writing CVs, completing application forms, participating in mock interviews, assessment centre activities and psychometric tests. The process of applying for a placement gives students the opportunity to experience a real-life, competitive job application process.

The business experience period enables students to apply their learning in the real-world work environment, to reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice. Students will be assessed during and at the end of this period, normally through a portfolio. This will be marked as pass/fail.

Students who undertake work-based placements often benefit greatly from the experience, gaining real experience and work achievements

**E3. Outline Programme Structure**

Each level is made up of four modules, each worth 30 credit points. Typically a student must complete 120 credits at each level. All students will be provided with the University regulations. Full details of each module will be provided in module descriptors and student module guides.

Students starting the course in September will work on the placement for between 10 – 12 months, starting from June, before their dissertation. Those students must confirm their placement before 15 May. Students on courses with January intake will work on the placement for between 10 – 12 months, starting from February, after completing their dissertation. Students on this intake must confirm their placement before 20 December. In either case, the suitability of the placement requires approval of the Course Leader.

Students on placement must complete a portfolio assessment which includes a reflection on how the theories they have learnt during their teaching year have helped them in their placement and demonstrate ability to apply their teaching in a real world situation

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| **Level 4** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Foundation Organic & Physical Chemistry | CH4001 | 30 | 4 | 1&2 |
| Foundation Inorganic & Environmental Chemistry | CH4002 | 30 | 4 | 1&2 |
| Introduction to Spectroscopic & Experimental Techniques | CH4003 | 30 | 4 | 1&2 |
| Academic Skills for Molecular Science | CH4004 | 30 | 4 | 1&2 |
| Progression to level 5 requires completion of the core modules. In addition students must complete at least 80% of the practical sessions.  Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Certificate of Higher Education. | | | | |

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| **Level 5** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Inorganic Chemistry | CH5001 | 30 | 5 | 1&2 |
| Organic & Medicinal Chemistry | CH5002 | 30 | 5 | 1&2 |
| Physical Chemistry | CH5003 | 30 | 5 | 1&2 |
| Analytical & Experimental Chemistry | CH5004 | 30 | 5 | 1&2 |
| Progression to level 6 requires completion of the core modules. In addition students must complete at least 80% of the practical sessions.  Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Diploma of Higher Education . | | | | |
| **Level 6** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Organic & Natural Product Chemistry | CH6001 | 30 | 6 | 1&2 |
| Inorganic & Physical Chemistry | CH6013 | 30 | 6 | 1&2 |
| Advanced Materials & Industrial Chemistry | CH6016 | 30 | 6 | 1&2 |
| Advanced Analytical Science | CH6007 | 30 | 6 | 1&2 |

Students exiting the programme at this point who have successfully completed 60 credits at level 6 are eligible for the award of Bachelor of Science (Ordinary Degree) Chemistry.

Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Bachelor of Science (Hons) Chemistry.

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| **Level 7** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Project | CH7001 | 60 | 7 | 1&2 |
| Design Discovery & Development of Pharmaceuticals | CH7070 | 30 | 7 | 1&2 |
| Advanced Inorganic & Physical Chemistry | CH7003 | 30 | 7 | 1&2 |
| Students exiting the programme with 120 credits at each level are eligible for the award of MChem | | | | |
| **Level 7** | | | | |
| **Option modules** | **Module code** | **Credit**  **Value** |  | **Pre-requisites** |
| Professional Placement | CI7900 | 120 |  |  |

1. **Principles of Teaching Learning and Assessment**

Knowledge and understanding of the field is developed from level to level. Level 4 consolidates and succeeds A level Chemistry and provides a core understanding of the main organic, inorganic and physical branches of the subject. It also furthers knowledge of laboratory techniques and analytical methods and provides breadth through introduction to environmental chemistry. Essential mathematical and computing skills are also emphasised. Level 5 extends discussion and comprehension of organic, inorganic, physical and analytical chemistry and also introduces aspects of medicinal chemistry. Level 6 of the programme allows students to pursue these same aspects to a higher level, while allowing them to gain familiarity with more applied areas of the field, for example looking at aspects of modern materials and industrial chemistry. At level 7, there is also a significant research project in an area of the student’s choice. Here, they are able to carry out individual investigations (either laboratory or literature based) from initial planning to final report. Research informs much of the teaching on the course and this is particularly the case in the final year, capstone project. Project supervisors frequently offer projects related to their own areas of expertise and active research, with final year project students making a contributing to these.

From level to level, students make progressively more use of primary and research-based sources of information. They develop skills to analyse and appraise original sources, assemble data from various sources, solve complex problems. Students are expected to become more independent in their learning as the course progresses.

A feature of this field is the range of practical work that is undertaken using advanced equipment and instrumentation. Students become familiar (by direct hands-on experience) with infrared, ultraviolet/visible and nuclear magnetic resonance spectroscopy, mass spectrometry, various forms of chromatography and some of the so-called hyphenated techniques.

Throughout the field, emphasis is placed on group work skills, written and oral communication and presentation skills, data handling and analysis skills, a range of ICT skills and independent learning skills. This provides the basis for students to enhance their personal objectives after graduation, whether these relate to further research or training, or to careers in science based industry, commerce or otherwise.

The skills developed during the study of the field are assessed within these various types of assessment. For example: the use of ICT is a normal expectation in the preparation of written work, reports etc.; data handling is inherent in many of the activities; assessments are carried out by groups and individuals, and greater self-reliance is needed from level to level. Assessment is tracked via a calendar to spread workload and to avoid bunching.

E-Technology plays an important role in enhancing learning and teaching throughout the chemistry course. StudySpace, a virtual learning environment that allows students to access lecture notes, assessments, screencasts, practical videos and links to Open Educational Resources (OERs) outside of the class room. Classroom technologies such as Starboard allow the electronic recording of work done “on the board” in the classroom. The use of Turnitin allows students to recognise the dangers of plagiarism and Grademark and other electronic marking systems are increasingly used by staff to give students quicker and clearer feedback. A large range of modules make use on on-line assessment tools to provide formative assessment with rapid feedback to enable students to prepare better for their subsequent summative assessments. E-technology is also used in the electronic marking of some practical work and in addition, it provides a forum for peer learning through the development and use of discussion boards.

The assessments are a mixture of course work and of end-of-module exams. Key pieces of coursework will be of a formative nature, allowing students to benefit and learn from feedback given on a piece of work, before completion of a similar, though summative assessment. Each module carries a final grade, which is made up of summative marks for course work and end of module assessments. The contribution of the individual elements of assessment to the module total and the requirements to pass each module are detailed in individual module guides.

Because of the importance of laboratory skills to the subject, there is also a requirement for a minimum of 80% attendance at practical sessions for progression to the next level of the course.

Many modules in the course have an assessment component comprised of a collection of smaller coursework elements such as practical forms, laboratory forms or data collected in class and small problem assignments. Continual review of these assessment elements is performed to ensure that students get feedback on one piece before doing the next and that the summative assessment burden is not so great to prevent students being engaged with the formative assessment opportunities offered in modules.

All students are allocated a personal tutor during the induction week preceding the first year of the course. They are encouraged to make contact with this staff member, who will remain an important figure in their three years at Kingston, during the induction week – perhaps informally at the Freshers’ Party, or by appointment later in the week before teaching starts. Having regular contact with a staff member who is able to get to know them personally is of great advantage to the student. Not only does it give them someone to consult for advice on academic and sometime non-academic matters, but it provides them with someone who is well informed to write a reference for them, either for placements or summer internships, or at towards the end of their course as they embark on the next stages of their careers.

Contact between staff and students in this context is aided and formalised through the completion of a e-Personal Development Portfolio. This involves students completing a number of short exercises over the three years, some of which contribute marks to the modules they are completing.

In the first year, there is an exercise on learning styles and study skills, probing the kinds of activity students encounter and find beneficial on their modules. This is followed up in the second semester with a review of academic progress. In the second year, attention turns more to employability and the completion of CVs and application forms in preparation for possible placements between the second and third years. These skills are introduced by a brief re-induction session preceding the start of the second year and are assisted by the Faculty’s placement administrators and employability coordinators. Prior to the final year, re-induction sessions focus more on the project work to be carried out during the year, while contact with personal tutors again focusses on employability and preparation for life as a graduate, after completion of the course.

1. **Support for Students and their Learning**

Students are supported by:

* A Course Leader, to help students understand the overall course structure
* A Module Leader for each module taken
* A Personal Tutor to provide academic and personal support
* A Placements Tutor to give advice on seeking placements and monitoring students while on placement
* Technical support to advise students on IT and the use of software
* An induction programme at the start of each new academic session
* A Student Voice Committee
* My Kingston/Canvas – an on-line interactive intranet and virtual learning environment
* Student support facilities, providing advice on matters such as finance, regulations, legal issues, accommodation, personal issues, disability, international student support.
* The Union of Kingston Students
* Careers and Employability Service

1. **Ensuring and Enhancing the Quality of the Course**

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

* External examiners
* Boards of study with student representation
* Annual review and development
* Periodic review undertaken at the subject level
* Student evaluation/ NSS returns
* Moderation policies
* An Industrial Advisory Board
* Staff Appraisal Scheme

1. **Employability Statement**

The course is designed to prepare students for employment in the chemical industry by providing them with the core knowledge and skills expected of a graduate chemist. Representatives from a range of employers were consulted while the course was being designed and their feedback was taken into account. The school has strong links with the chemical industry through its long running industrial placement programme and students are encouraged to take up 12 month placements (or alternatively, 3 month summer internships) where possible. Some of these placements lead to offers of employment once the student has successfully completed the course. A number of more local employers come into the school to give presentations about their companies and the opportunities in them (for example, Procter & Gamble and GlaxoSmithKline).

In addition to developing discipline specific employability skills, the course is designed with generic employability skills embedded.  In the second year students are required, in the practical skills and research methods module, to explore possible career paths open to chemistry graduates. They have to prepare a group presentation on one path and attend presentations on a variety of career paths given by other groups of students.  This level 5 module and the level 6 Project module builds on work done in the personal tutor system, and the academic skills module, to make students reflect on and develop the attributes that employers seek in graduates. These include independent learning, the ability to work in teams, time management skills, verbal and written communication skills. A number of these skills are also developed through group work and presentations in other modules. One role of the personal Tutor system is to encourage students to develop such skills through volunteering, sports activities, positions of responsibility in clubs and societies, student ambassador schemes and study abroad.

Studying abroad is actively encouraged via the promotion of the four degree with international exchange. This allows students to spend an entire year abroad after their second year. It counts as only one 60 credit module (“international exchange”) which is pass or fail. The modules studied abroad do not replace any Kingston modules.  The European and Study Abroad office in the international office helps students find a suitable institution abroad. This route gives students the chance to study a broader curriculum and obtain a deeper understanding of their discipline. International exchange provides a valuable opportunity for students to broaden their experience and develop transferable skills. The international perspective they gain from their year abroad should be highly valued by global employers in the chemical Industry.

In recent years, graduates from the school have taken employment with a number of large, multinational companies including Procter & Gamble and GlaxoSmithKline. Others are employed by SMEs including Medpharm and BodycoteProva, while others enter public sector organizations including the NHS and the Laboratory of the Government Chemist. About 25% each year go on to postgraduate study, including the PGCE, leading to teaching careers.

1. **Approved Variants from the Postgraduate Regulations**

There are no variants.

1. **Other sources of information that you may wish to consult**

QAA Benchmark in Chemistry:

<http://qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-chemistry-14.pdf?sfvrsn=99e1f781_10>

Royal Society of Chemistry: <http://www.rsc.org/>

Higher Education Academy: <https://www.heacademy.ac.uk/>

**Development of Programme Learning Outcomes in Modules**

This map identifies where the programme learning outcomes are assessed across the modules for this programme. It provides an aid to academic staff in understanding how individual modules contribute to the programme aims, and a means to help students monitor their own learning, personal and professional development as the programme progresses and a checklist for quality assurance purposes. Include both core and option modules.

|  |  |  | **Level 4** | | | | **Level 5** | | | | **Level 6** | | | | **Level 7** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Module Code** |  | **CH4001** | **CH4002** | **CH4003** | **CH4004** | **CH5001** | **CH5002** | **CH5003** | **CH5004** | **CH6001** | **CH6016** | **CH6007** | **CH6013** | **CH7001** | **CH7070** | **CH7003** |
| **Programme Learning Outcomes** | **Knowledge & Understanding** | A1 | S | S | F/S |  | S | S | S |  | F/S | F/S | S | F/S | F/S | S |  |
| A2 | S |  |  |  | S |  | S | F/S | F/S | S | F | F/S | F/S | FS | F/S |
| A3 |  | S | F/S |  |  | S |  | F/S | F/S | F/S | F |  | F/S | FS |  |
| A4 | S |  |  | S | F | S | S | S | F/S | F/S | F | F/S |  | FS |  |
| A5 |  |  |  |  |  |  |  | F |  |  | F |  | F/S | FS |  |
| **Intellectual Skills** | B1 | F | S |  | S |  |  | F | F | F/S | S | S | S | F/S |  | F/S |
| B2 | S |  |  | S | S | S | S | S | F/S | F/S | F | F/S | F/S |  |  |
| B3 |  |  | F/S | F | S | F | F | S | F/S |  | F | S | F/S | FS | F/S |
| B4 | F |  |  | S |  | S | S | F/S | F |  | S | F | F/S |  |  |
| **Practical Skills** | C1 | S | S | F/S | F |  | S | S | S | F/S | F/S |  | F/S | F/S | FS |  |
| C2 | S | F/S | F/S |  | S | S | S | S | S | S | S | F/S | F/S | FS |  |
| C3 |  |  | F/S |  | F |  |  | S | F |  | F |  | F/S | FS |  |
| C4 |  |  | F/S |  |  | F/S | S | F/S | F |  | F | F | F/S | FS |  |
| **Key Skills** | AK1 | S |  |  | S | F | F | F |  | F | S | F |  |  |  |  |
| AK2 | F | F | F/S | S |  | F | F |  | F | S | F | F |  | F | F/S |
| AK3 | F |  | S | F |  | F | F |  | F | F | F |  |  | FS | S |
| AK4 |  |  | S | F | F | F | F |  | F | F | F | F | S | FS | S |
| BK1 | S | S | S | S |  | S | S |  | F/S |  | F | S | F/S |  | F/S |
| BK2 |  | S |  | F |  | S | F |  | F/S | F/S | F | S | F/S | FS |  |
| BK3 | F | S |  | F | S | F | F |  | F/S | F | F |  | F/S | FS |  |
| CK1 | F | S | S |  | S | F | S |  | F/S | S | F | F |  |  |  |
| CK2 |  |  |  |  |  | F |  |  | F |  | F | F | F/S | F |  |
| CK3 |  | S |  |  |  | F | S |  | F | F | F |  |  |  |  |
| CK4 | F |  |  | S | F | F | F |  | F |  | F | F | F/S | F | F |
| DK1 | F | S | F/S | S | F | S | S |  | F/S | F/S | F |  | S | FS | F/S |
| DK2 | F |  |  | S |  | S | S |  | S | S | F |  | S | FS | F/S |
| DK3 |  |  |  |  |  |  |  |  | S | F/S | F | S |  |  |  |
| DK4 | S | S | F/S | S |  | S | S |  | S | S | F | S | S | S | F/S |
| DK5 | S | S | F/S | S | F | S | S |  | S | S | F | F/S | S | F |  |
| EK1 | F |  | S | F |  |  | S |  | F/S |  | F | S | F/S | FS | F/S |
| EK2 | S | F/S | S | S | S |  | S |  | F/S | S | F | S | F/S | FS |  |
| EK3 | S |  | S |  |  |  | F |  | F/S | S | F | F/S | F/S | FS | F/S |
| EK4 | F |  | S | S | S |  | S |  | F/S | F | F |  | F/S | FS |  |
| FK1 |  |  |  |  |  | F |  |  | F | F | F |  | F/S |  |  |
| FK2 |  |  |  |  |  | F |  |  | F | F | F |  | F/S |  |  |
| FK3 |  |  |  |  | S | F |  |  | F | F | F |  | F/S | F | F/S |
| FK4 |  | F | S |  | S | F |  |  | F | F | F |  |  |  |  |
| GK1 | F |  |  | S | S | S | S |  | F/S | F/S | F | S | F/S | FS |  |
| GK2 |  |  |  | F |  | S |  |  | F/S | F/S |  | S | F/S | FS | F/S |

**S**  indicates where a summative assessment occurs (i.e. one that carries formal marks)

**F** where formative assessment/feedback occurs

**Technical Annex**

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| --- | --- |
| **Final Award(s):** | MChem (Hons) Chemistry |
| **Intermediate Award(s):** | Cert HE, Dip HE, Ordinary degree |
| **Minimum period of registration:** | 4 years |
| **Maximum period of registration:** | 8 years full time |
| **FHEQ Level for the Final Award:** | Masters (MChem) |
| **QAA Subject Benchmark:** | Chemistry |
| **Modes of Delivery:** | Full time/part time |
| **Language of Delivery:** | English |
| **Faculty:** | Health, Science, Social Care & Education |
| **School:** | Life Sciences, Pharmacy & Chemistry |
| **JACS code:** | F104 |
| **UCAS Code:** | F104 |
| **Course Code:** | NPCKUDH3F |
| **Route Code:** | NUCHE |
|  |  |