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**Programme Specification**

**Title of Course:**  **MSc Cancer Biology**

**Date Specification Produced:**  **July 2014**

**Date Specification Last Revised:**  **August 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 the Course Handbook and Module Descriptors.

**SECTION 1: GENERAL INFORMATION**

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| **Title:** | MSc Cancer Biology |
| **Awarding Institution:** | Kingston University |
| **Teaching Institution:** | Kingston University |
| **Location:** | Penrhyn Road |
| **Programme Accredited by:** | IBMS |

**SECTION2: THE PROGRAMME**

1. **Programme Introduction**

Cancer remains a major threat to humans, both in terms of morbidity and mortality. It is responsible for several million deaths worldwide each year. Research into the causes of cancer and its treatment is one of the most rapidly developing fields of science; new and more effective cancer therapies are being developed at a faster pace than ever before. If, as a postgraduate student, you want to have an in-depth knowledge of cancer, its diagnosis and current and future therapies, then this course is for you. MSc in Cancer Biology at Kingston University is a unique postgraduate course which combines high class teaching by research active staff or practising clinicians with relevant laboratory and research skills. It will prepare you for a career in cancer laboratory diagnosis and research, as well as in pharmaceutical or general healthcare industries.

Aims of this programme are to provide students with a thorough understanding of genetic, molecular and cellular changes leading to cancer, linked to an understanding of specialist approaches to its diagnosis and treatment.

The programme is designed to link students’ knowledge of Cancer Biology with practical and clinical applications in this field, focussing especially on modern diagnostic methods. The teaching team consists of research active academic staff, practising clinicians and expert scientists; thus ensuring that the programme content reflects current practice. In addition to enhancing students’ knowledge in Cancer Biology, the programme will develop their written, oral and analytical skills to postgraduate level.

The programme comprises four taught modules , named (i) Immunology and Biology of Disease (ii) Cellular & Molecular Biology of Cancer (iii) Cancer Diagnosis & Therapy and (iv) Research Techniques & Scientific Communications. In addition, students will carry out an extended research project in a cancer related field where they will be given the opportunity to apply their knowledge and to develop competences in advanced laboratory techniques. The project is a key component of the programme, and requires students to independently plan and carry out a sustained piece of research, which is assessed through a written thesis, and presentation of their work as an oral.

1. **Aims of the Field/Course**

The aims of the MSc Cancer Biology programme are;

* to develop and extend students’ knowledge of topics in cancer biology beyond an honours degree level.
* to produce graduates with a knowledge and skills base that allows pursuit of lifelong learning and careers in a wide variety of work environments. to encourage students to develop an informed, reflective and critically analytical approach to the subject of cancer biology Biomedical Science.
* to provide an education in the theoretical and applied aspects of pathology at cellular and systemic levels, and to convey an understanding of the principles of cancer diagnosis and monitoring and of the biological basis of different cancer treatment modalities.
* to provide a theoretical background to factors governing the design, selection and interpretation of laboratory investigative techniques and treatment strategies in haematological malignancies and solid cancers.
* to further develop the ability to source information and to understand and critically appraise a research paper or article, including an assessment of the experimental design and methods of statistical analysis.
* to enable students to carry out an independent research project related to cancer biology, and to communicate results in a variety of formats.

1. **Intended Learning Outcomes**

The field/course provides opportunities for students to develop and demonstrate knowledge and understanding specific to the subject, key skills and graduate attributes in the following areas. There are no QAA benchmarks for this subject at level 7, but the programme outcomes are referenced to 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; MSc in Cancer Biology** | | | | | |
|  | **Knowledge and Understanding**  On completion of the course students will be able to: |  | **Intellectual Skills**  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 principles and practice of a variety of topics in Cancer Biology | B1 | demonstrate the ability to learn independently | C1 | understand, and be able to comply with, safety in the laboratory |
| A2 | the principles of constructive criticism in Cancer Science | B2 | undertake the analysis and interpretation of experimental data | C2 | demonstrate competence in a range of practical and analytical techniques appropriate to Cancer Science |
| A3 | the biological basis of disease | B3 | apply subject knowledge and understanding to the solving of problems in Cancer Biology | C3 | demonstrate skills in the evaluation, presentation and interpretation of laboratory data |
| A4 | the principles and applications of a range of molecular techniques relevant to Cancer Biology | B4 | assemble, interpret and critically evaluate information and data from a variety of sources (including academic literature) | C4 | demonstrate new and/or improved practical skills and apply them in a research setting |
| A5 | the role of the pathology laboratory within the wider context of health care | B5 | use their generic intellectual and key skills in their lifelong learning and future employment | C5 | apply their subject specific knowledge to the planning, design and delivery of an experimental research project |
| A6 | the human immune system, its components and interactions at a molecular level and the relationship between the science of immunology and the aetiology and diagnosis of disease | B6 | have the ability to apply independent judgement and original thought in a variety of contexts relevant to Cancer Biology |  |  |
| A7 | the methologies and clinical rationale of diagnosis and therapy of different solid cancers and haematological malignancies | B7 | to critically evaluate their own findings as well as those of others |  |  |
| A8 | the principles of objective scientific research | B8 | present their own research in a clear and concise fashion in writing and in scientific presentations |  |  |
| A9 | the ethical implications of scientific research in the field of cancer |  |  |  |  |
| A10 | the statistical and computing techniques required to assess and present their own data |  |  |  |  |

In addition to the programme learning outcomes identified overleaf, the programme of study defined in this programme specification will allow

students to develop a range of Key Skills as follows:

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

1. **Entry Requirements**

The minimum entry qualifications for the programme are:

A good second class honours degree in a human biology related discipline, containing a significant component of immunology and subjects relevant to the chosen specialist route.

Applicants with qualifications that do not meet these requirements, but with significant professional experience, may also be considered.

A minimum IELTS score of 6.5, with 6.0 in Writing and no sections less than 5.5 (or equivalent) is required for those for whom English is not their first language.

1. **Field/Course Structure**

This programme is offered in full-time/part-time mode, and leads to the award of an MSc in Cancer Biology. Transfer from a similar programme is possible but is at the discretion of the programme team. Intake is normally in September and January.

**E1. Professional and Statutory Regulatory Bodies**

N/A

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

Work placements are actively encouraged – although it is the responsibility of individual students to source and secure such placements. 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.

Placements in commercial, research and NHS laboratories are also available for some students when carrying out their Research Projects. Care is taken to involve students in the day-to-day work of these laboratories, allowing students to gain an understanding of how important ‘employability skills’ are in a ‘real-world’ situation.

**E3. Outline Programme Structure**

The academic year is made up of four modules each worth 30 credit points and a summer research project module worth 60 credit points. All students will be provided with the University regulations. Full details of each module will be provided in module descriptors and student module guides.

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| **Level 7** | | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |  |
| Research techniques and scientific communication | LS7001 | 30 | 7 | 1 and 2 |  |
| Cancer Diagnosis & Therapy | LS7007 | 30 | 7 | 1 and 2 |  |
| Immunology and the biology of disease | LS7002 | 30 | 7 | 1 and 2 |  |
| Cellular and Molecular Biology of Cancer | LS7008 | 30 | 7 | 1 and 2 |  |
| Research Project | LS7010 | 60 | 7 | - |  |

Students exiting the programme with 60 credits are eligible for the award of PgCert in Cancer Biology.

Students exiting the programme with 120 credits are eligible for the award of PgDip in Cancer Biology.

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

Keeping in view the varied academic background of the students doing the MSc in Cancer Biology, teaching and assessment on this programme is designed to ensure that can learn effectively.

The Research Project, which comprises one third of the programme, is designed as a ‘capstone’ project, and aims to give students the opportunity to use and synthesise the knowledge and skills they have acquired during their degree e.g. by using applied “real world learning” (such working on a live project for an employer), presenting work in formats appropriate to wider audiences, practice new and/or improved laboratory skills, and most importantly demonstrate the ability to independently solve complex problems

There are four Curriculum Design Principles. These have been utilised within the teaching, learning and assessment regimes for the course as follows:

* Assessment for learning designed at course level with opportunities for feedback and ‘feedforward’ explicitly specified at the design stage
  + All Assessments have been designed at level 7, as appropriate for the MSc, and in a manner that encourages students to link each assessment with intended learning outcomes. For example, in LS7007 (Cancer Diagnosis and Therapy), students are offered a formative assessment in the form of a short report on a diagnostic technique or treatment modality for a particular type of cancer. This formative assessment precedes the summative assessment of a case study on diagnosis, staging and treatment of cancer.
  + Students will have feedback available for all assessments; including generic and specific feedback to individual students.
  + Feedback will enable the students to learn from each assessment experience and feedforward that learning to future assessments, most critically to the final assessments in the summer Research Project module. The ‘Critical Review’ assessment in LS7001 (Research techniques and scientific communication) is designed to prepare students for their Research Project by allowing them to consider needs completion
* Research-led and research informed teaching with increased opportunities for undergraduate research and capstone projects
  + The Curriculum content is heavily research-led and research informed.
  + Modules incorporate opportunities to explore current developments in the field.
  + Teaching teams draw on the academic strengths and research interests of staff.
  + Students complete their MSc by conducting a research project.
* A robust, academically-led personal tutor system which helps to personalize students’ experience and track their academic development
  + Each student is assigned a personal tutor.
  + Module content includes the opportunity for students to personalize the content of their assignments and topics being explored.
* An embedded employability curriculum at discipline level featuring credited placement/internship opportunities for all students and explicit links to the co-curriculum;
  + Employability skills are embedded into several modules, including ‘applying for funding’ (LS7001), and ‘industry specific recruitment information’ (e.g. from external expert practitioner lecturers). Communication skills (‘presenting your published work) are emphasized in all modules in a variety of media, including written and oral presentation.
  + Key laboratory-based skills are included in the taught modules and in the independent research projects, for which students may have an opportunity to take up a placement outside Kingston University.
  + Specialist visiting lecturers from Industry, the Health Service and research organisations and also visits to these organisations provide great insight into employability skills

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

In order to assist students in achieving their learning outcomes, the Faculty of Health, Science, Social Care and Education has a raft of initiatives to support postgraduate students in both academic and pastoral issues. These are summarised below, and include skills workshops that offer English language support, academic surgeries, detailed induction and orientation programmes at the start of the academic year, and subject-based conference style events. Advice on generic study skills is available on the electronic learning management system (Canvas) to which all students have access; this includes advice on writing, oral communication, numeracy, problem-solving and career management, among others.

Students also have access to Academic Success Centre (ASC), which provides a ‘drop in’ service giving advice on all non-subject based aspects of academic work including;

* grammar and punctuation,
* academic structure
* referencing and plagiarism
* maths skills

Students are encouraged to discuss academic and pastoral concerns with their Course Director/personal tutor, and all academic staff operates a system of Office Hours during which students can consult their lecturers. In addition the Faculty employs Student Support Officers who are available in both drop-in and appointment sessions to support students in all aspects of their education, including pastoral issues.

The Personal Tutor Scheme (PTS) has been designed to ease a student’s transition into postgraduate study by building a rapport between themselves and academic staff as soon as possible, so personalising their experience at Kingston. Students are placed in small tutorial groups (3-4 students), and are encouraged to work together to provide mutual support. Where possible these groups will include a mix of Kingston alumni, UK and overseas students, and they will meet with their Course Director/personal tutor two to three times in each teaching block.

The PTS aims;

* To provide appropriate academic advice and guidance to students throughout their time at Kingston by monitoring their progress and helping to identify individual needs
* To foster a close and engaged academic relationship with students and advise and refer students to other University services as appropriate
* To help to develop students’ ability to be self-reliant and self-reflective and their ability to use feedback to best advantage
* To provide a link between curricular and co-curricular aspects of employability

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| **Summary of Student Support**   * A Module Leader for each module * A Course Leader to help students understand the programme structure, who also acts as Personal Tutor to provide academic and personal support * Technical support to advise students on IT and the use of software * A designated programme administrator * An induction week at the beginning of each new academic session * Student Voice Committee * Canvas – a versatile on-line interactive intranet and learning environment * A substantial Study Skills Centre that provides academic skills support * Student support facilities that provide advice on issues such as finance, regulations, legal matters, accommodation, international student support etc. * 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 subject level
* Student evaluation
* Moderation policies

1. **Employability Statement**

This programme has been designed to meet the requirements of a Master’s level qualification and as such prepares students for a career in hospital-based cancer laboratories, research institutions and for a PhD in oncology.

Current employers are involved in the delivery of the programme, and ensure that the content of the programme, and the knowledge and skills students acquire, are appropriate to workplace requirements.

Emphasis is also placed on the transferability of these skills, and graduates of this programme have taken up posts in a variety of employment settings including the NHS, commercial and research laboratories. Some students continue with their studies, and the programme is an excellent basis for those who intend to pursue a research career via a PhD. Additionally, the degree can be used as a qualification for entry to PGCE teacher training.

For students already in employment the programme offers an opportunity to enhance their knowledge and to develop their practical, intellectual and key skills to assist them in their career development.

1. **Approved Variants from Postgraduate Regulations**

None

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

Programme information on the University website

<http://www.kingston.ac.uk/postgraduate-course/biomedical-science-msc/>

The School of Life Sciences

<http://sec.kingston.ac.uk/about-SEC/schools/life-science/>

**Development of Field/Course Learning Outcomes in Modules**

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

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|  |  |  | **Level 7** | | | | |
|  | **Module Code** | | LS7001 | LS7002 | LS7007 | LS7008 | LS7010 |
| **Programme Learning Outcomes** | **Knowledge & Understanding** | A1 | S | FS |  | S | FS |
| A2 | S | F | S | S | FS |
| A3 |  | FS | FS | FS |  |
| A4 | S |  |  | FS |  |
| A5 | F | F | FS |  |  |
| A6 |  | FS |  | S |  |
| A7 |  |  | S |  | FS |
| A8 | S | F |  |  | FS |
| A9 | S |  | F | F | FS |
| A10 | S |  | FS | S | FS |
| A11 | F |  | FS | FS | FS |
| **Intellectual Skills** | B1 | S | FS | FS | FS | FS |
| B2 | S | FS | S | S | FS |
| B3 |  | FS |  | S | FS |
| B4 | S | FS | FS | F | FS |
| B5 | FS | FS | FS | FS | FS |
| B6 | FS | FS |  |  | FS |
| B7 | FS | FS |  | FS | FS |
| B8 | S |  |  |  | FS |
| **Practical Skills** | C1 | FS | FS | S | S | FS |
| C2 | S | FS |  | S | FS |
| C3 | S | S | S | S | FS |
| C4 | S |  | FS | FS | FS |
| C5 | FS |  |  |  | FS |
| **Transferable Skills** | AK1 | F | F | F | F | FS |
| AK2 | F | F | F | F |  |
| AK3 | S | FS | FS | FS | FS |
| AK4 | S | FS | FS | FS | FS |
|  | BK1 | FS | FS | FS | FS | FS |
|  | BK2 | FS | FS | S | FS | S |
|  | BK3 | FS | F | S | FS | S |
|  | CK1 | FS | F | F | F |  |
|  | CK2 | F | F | F | F | FS |
|  | CK3 | F | F |  |  |  |
|  | CK4 | FS | F | F | F | FS |
|  | CK5 | F |  |  |  |  |
|  | DK1 | FS | FS | S | S | S |
|  | DK2 | FS | FS | S | FS | S |
|  | DK3 | FS |  | F | F | S |
|  | DK4 | FS | S | S | S | S |
|  | DK5 | FS | S | S | FS | S |
|  | EK1 | FS |  | S | S | FS |
|  | EK2 | FS | S | FS | FS | S |
|  | EK3 | FS | FS | S | FS | S |
|  | EK4 | FS | FS | S | FS | S |
|  | FK1 | S |  | S | S | FS |
|  | FK2 | FS |  | F | F | FS |
|  | FK3 | FS |  |  |  | S |
|  | FK4 | F | F | F | F |  |
|  | GK1 | S | FS | FS | FS | FS |
|  | GK2 | S | FS | S | S | FS |

**Students will be provided with formative assessment opportunities throughout the course to practise and develop their proficiency in the range of assessment methods utilised.**

**S**  indicates where a summative assessment occurs.

**F** where formative assessment/feedback occurs.

**Technical Annex**

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| **Final Award(s):** | MSc in Cancer Biology |
| **Intermediate Award(s):** | Postgraduate Certificate in Cancer Biology  Postgraduate Diploma in Cancer Biology |
| **Minimum period of registration:** | 1 Year full time, 2 years part time |
| **Maximum period of registration:** | 2 years full time, 4 years part time |
| **FHEQ Level for the Final Award:** | 7 |
| **QAA Subject Benchmark:** | N/A |
| **Modes of Delivery:** | Full time, part time |
| **Language of Delivery:** | English |
| **Faculty:** | Health, Science, Social Care and Education |
| **School:** | Life Sciences, Pharmacy and Chemistry |
| **JACS code:** | B900 |
| **UCAS Code:** | N/A |
| **Course Code:** | N/A |
| **Route Code:** | NPCAB |
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