## PROGRAMME APPROVAL FORM

### SECTION 1 – THE PROGRAMME SPECIFICATION

<table>
<thead>
<tr>
<th>1. Programme title and designation</th>
<th>Biomedical Science</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Biomedical Science with Extra-Mural Year</td>
</tr>
<tr>
<td>Singlehonours</td>
<td>Joint</td>
</tr>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>2. Final award</th>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
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<tbody>
<tr>
<td></td>
<td>BSc</td>
<td>Biomedical Science</td>
<td>360</td>
<td>180</td>
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<tr>
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<td>BSc (Hons)</td>
<td>Biomedical Science with Extra-Mural Year</td>
<td>420</td>
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<tr>
<th>3. Nested awards</th>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
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<tr>
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<td>N/A</td>
<td>N/A</td>
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<table>
<thead>
<tr>
<th>4. Exit awards</th>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS equivalent</th>
<th>Any special criteria</th>
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<tbody>
<tr>
<td></td>
<td>UG Cert</td>
<td>Biosciences</td>
<td>120-235</td>
<td>60-117</td>
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<tr>
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<td>Biosciences</td>
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| 5. Level in the qualifications framework | H |

<table>
<thead>
<tr>
<th>6. Attendance</th>
<th>Full-time</th>
<th>Part-time</th>
<th>Distance learning</th>
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<tbody>
<tr>
<td>Mode of attendance</td>
<td>x</td>
<td>x</td>
<td>N/A</td>
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<tr>
<td>Minimum length of programme</td>
<td>3 years</td>
<td>4 years (EMY)</td>
<td>5 years</td>
</tr>
<tr>
<td>Maximum length of programme</td>
<td>10 years</td>
<td>10 years</td>
<td></td>
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<table>
<thead>
<tr>
<th>7. Awarding institution/body</th>
<th>King’s College London</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Teaching institution</td>
<td>King’s College London</td>
</tr>
<tr>
<td>9. Proposing department</td>
<td>Interdisciplinary</td>
</tr>
<tr>
<td>10. Programme organiser and contact</td>
<td>Dr Esther Bell</td>
</tr>
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</table>

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PAF modified by R Abdumavlyanov on 25 September 2015
Programme approval 2006/07

Details

11. UCAS code (if appropriate) BC99
12. Relevant QAA subject benchmark/ professional and statutory body guidelines Biosciences
13. Date of production of specification Nov 2006 (Implementation of CF)
14. Date of programme review 2019/2020

16. Educational aims of the programme
1. Produce students with cross-disciplinary approach to the biomedical science degree.
2. Encourage an individual and self-reflective approach to the student’s educational requirements including subject areas outside of disciplinary biomedical science.
3. Produce students with the skills and knowledge to progress to postgraduate study and/or equipped for employment in modern bioscience industries.
4. Continue to develop areas of teaching in response to the advance of scientific scholarship and the needs of the community.
5. To equip graduates with a good foundation for a career in scientific research or employment in industry in biochemistry and allied fields
6. Provide students with the opportunity to spend a year working in Industry or a Research Institute.

17. Educational objectives of the programme/programme outcomes
The programme provides opportunities for students to develop and demonstrate knowledge and understanding and skills in the following areas:
1. Analytical and critical skills in the process of acquiring a specific body of knowledge development of logical, creative scientific thinking and the ability to communicate ideas and concepts.
2. Promotion of self-direction in learning by use of published resources and University seminars.
3. Develop an ability to integrate advances in scientific and professional understanding throughout academic, professional and personal development
4. Have an understanding and appreciation of the ethical and social aspects of science.

By the end of the programme are expected to have
1. Attained knowledge in Biomedical Science to honours degree level.
2. Prepared relevant materials for review by peers and tutors (poster, essay, and tutorial contributions), using written and oral communication skills.
3. Explored aspects of the taught modules in depth through lecturer/tutor-directed and self-directed reading so as to be able to critically evaluate facts, theories and hypotheses.
4. Acquired a sense of responsibility for the choice and direction of their second and final year studies.
5. Acquired some practical or practical-related skills relevant to the subject and would normally have carried out a research project that is relevant to the subject.
6. Acquired and developed computer, IT, comprehension, oral and written skills to achieve all of the objectives listed above.

Knowledge and understanding

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The programme provides a **knowledge and understanding** of the following:

The relevant elements of Biochemistry, Molecular Biology, Genetics, Anatomy, Developmental Biology, Pharmacology and Physiology.

The relevant concepts related to Biochemistry, Molecular Biology, Anatomy, Developmental Biology, Pharmacology and Physiology.

A respect for the views of others and for the value of education.

An appreciation of the processes of scientific discovery, including the exploitation and socially-responsible use of those discoveries.

Awareness of major issues currently at the forefront of Biomedical research

The ethical and social issues surrounding Biomedical research.

These are achieved through the following teaching/learning methods and strategies:

- Acquisition is through lectures and small group teaching (tutorials, problem solving workshops), laboratory based practicals and CAL.

- Students are required to prepare coursework such as essays, a research project dissertation, posters, practical write up. These exercises require independent study.

- In some modules, students give seminars to their peers and members of staff. These exercises require independent study.

- Students, throughout the programme, are encouraged to undertake independent reading, through library and internet use, both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.

**Assessment:**

Testing of knowledge and understanding is through a combination of formative and summative assessment, such as unseen written examinations, assessed coursework in the form of laboratory-based experiment write-ups, essays, oral presentations, poster presentations, CAL tests, and a research project dissertation. Some modules require students to have oral examinations.

The extramural year is assessed by the written dissertation and an oral presentation.

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**Skills and other attributes**

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**Intellectual skills:**
To use the scientific literature to obtain information relating to specific areas of interest.

The communication, orally and in written form, of scientific theories, concepts and experimental findings.

An understanding of hypothesis driven science.

Construction of hypotheses and expression of opinions, including evaluation of competing/conflicting hypotheses and/or theories.

Synthesis, integration and evaluation of information and data from a variety of sources.

Detailed knowledge and understanding of the essential facts, concepts, principles and theories relevant to the student’s chosen area of specialisation.

These are achieved through the following **teaching/learning methods and strategies:**

Didactic teaching such as lectures. Final year lectures, in particular, provide reading lists to enable students to access the primary scientific literature.

Participatory teaching such as tutorials, problem solving workshops and computer aided learning.

Laboratory based practicals. Student centred presentations including oral and poster presentations. Formative and summative essay writing.

**Assessment:**

Formative and summative: In-course assessment, e.g. posters, oral presentations. Unseen written exams. CAL tests. For some students: oral examinations.

The extramural year is assessed by the written dissertation and an oral presentation.

**Practical skills:**

Essential laboratory skills in biomedical sciences, including the appropriate and safe use of common equipment such as light microscopes, pipettes, glassware and common laboratory reagents. Taking notes of experiments, preparing write-ups of laboratory experiments, handling and analysing data.

For some students, who choose to undertake a laboratory-based research project in their final year and/or students taking a placement year: planning and executing safely a series of experiments.

These are achieved through the following **teaching/learning methods and strategies:**

Project work under direction of supervisor, and write-ups and oral and poster presentations and the extramural year written dissertation and an oral presentation.

Laboratory practicals, both wet and dry.

Tutorials and problem solving workshops.
Advanced practical skills associated with specific areas of research

Computer skills, particularly use of e-mail, word processing, web, powerpoint presentations, spreadsheets, statistical analysis.

In conjunction with supervisors students also have to draw up their risk assessments during their final project and extramural year.

**Assessment:**
Formative and summative:
In-course assessment, e.g. posters, oral presentations.
Unseen written exams.
CAL tests.
Project dissertation
For some students: oral examinations.

The practical skills of the extra-mural students are assessed by their dissertation and a short report from their industrial supervisor.

**Generic/transferable skills:**
Evaluation of the logical strength of a scientific argument.
Time management and organisational skills.
Oral and written communication skills.
Computer skills e.g. e-mail, internet, use of search engines/strategies.
Library skills.
Data analysis skills.
Interpersonal skills and group activity skills.
Have a clear understanding of the concept and implications of plagiarism.
Ability to work effectively as a team member.
Management of an individual education plan and career aims.

These are achieved through the following teaching/learning methods and strategies:
Project work under direction of supervisor, and write-ups and oral and poster presentations.
Laboratory practicals, both wet and dry.
Tutorials and problem solving workshops.

The extramural year should help develop both an understanding of working as part of a team and individual skills related to research.

**Assessment:**
Formative and summative:
In-course assessment, e.g. posters, oral presentations.
Unseen written exams.
CAL tests.
Project dissertation
Assessment of programme plan
For some students: oral examinations.
The skills of the extramural year are assessed by their dissertation and a short report from their industrial supervisor.

18. Statement of how the programme has been informed by the relevant subject benchmark statement(s)/professional, regulatory and statutory body guidelines
The Biomedical Science Benchmark Statement was designed for professional accreditation in NHS laboratories and is not appropriate. However the programme structure and content has been compared to and conforms to the more relevant Biosciences Benchmark Statement.

19. Programme structure and award requirements (where relevant the information should also differentiate the particular requirements of pathways within a programme or nested/exit awards)

(a) numbers of introductory, core, compulsory and optional modules to be taken in each year of the programme with related credit values

Biomedical Science
Year 1: 6 compulsory modules at level 4 (120 credits)

Year 2: Optional modules at level 5 (120 credits), as approved by the Programme Adviser.

OR year abroad in an associated institution, Optional modules at level 5 (120 credits), as approved by Programme Adviser.

Final Year: Optional modules totalling 120 credits, as approved by the Programme Adviser to include a library or laboratory project

Biomedical Science with Extra-Mural Year
Year 1: 6 compulsory modules at level 4 (120 credits)

Year 2: Optional modules at level 5 (120 credits), as approved by the Programme Adviser.

OR: year abroad in an associated institution, Optional modules at level 5 (120 credits), as approved by Programme Adviser.

Year 3 - Extra-Mural Year. 1 x 60 credit core module at level 6.

Final Year: Optional modules totalling 120 credits, as approved by the Programme Adviser to include a library or laboratory project

(b) range of credit levels permitted within the programme levels 4, 5 and 6

(c) maximum number of credits permitted at the lowest level
150 credits

(d) minimum number of credits required at the highest level
90 credits (150 for extra mural year)

(e) progression and award requirements (if different from the standard)
Standard

(f) maximum number of credits permitted with a condoned fail (core modules excluded)
Condonement will be determined by the Programme Board of Examiners in accordance with the School Boards Policy on condonement in the version approved for the year of initial registration of the student.

(g) are students permitted to take a substitute module, as per regulation A3, 20.7?
Yes

(h) other relevant information to explain the programme structure
Students are admitted into the first year registered for the BSc Biomedical Science, and take the Common First Year diet.

In the second year, students must choose at least 90 credits of their study from second-year biomedical modules in the School, as approved by the Programme Adviser.

Students have the option to spend their second year abroad at another institution. Students are able to choose from a list of Institutions that have been approved by Academic Board. Students must select appropriate equivalent compulsory modules at their Exchange university (equal to 120 credits). Marks gained at the overseas institution will not contribute towards the C-Score calculated for the student. In line with the College approved “Credit Transfer” model for the translation of marks attained through study away from College, the candidate will be required to pass modules taken overseas in order to satisfy progression requirements.

Extra-mural year
All students originally register on Biomedical Science BSc programme in the first year. At the start of the second year students apply for an Extramural Year placement either in Industry or at a Research Institute. They can apply for the extra mural programme organised by either the Biochemistry or Pharmacology departments but not both. Those students that are successful in obtaining a placement then transfer on to the Biomedical Science with EMY programme. The students take up their placement after the end of their second year. The Extramural Year is assessed by a dissertation on a Pass/Fail basis (40%). This mark will not contribute to the final calculation of classification using the C-score. Students who fail the extramural year dissertation will be transferred back to the BSc Biomedical Science programme.

In the final year, students must choose at least 90 credits of their study from final-year biomedical modules in the School for which they have already acquired suitable prerequisite modules, to include a library or laboratory project as approved by the Programme Adviser.
Students may take up to 30 credits outside the School, to include modern language modules, subject to approval by the Programme Adviser. The programme plan must be approved by a Programme Adviser who will take into account the need for a coherent but multi-disciplinary approach to the biomedical sciences.

To proceed from year one to year two students will normally be required to pass a minimum of 90 credits, with any remaining credits within the condoned fail range (a mark greater than 32%).

To proceed from the year two to year three, a student will normally be required to pass a minimum of 210 credits with any remaining credits within the condoned fail range (a mark greater than 32%).

Programme structure
See Programme Handbook for modules to be taken.

20. Marking criteria
All modules will be marked in accordance with the Schools marking criteria where such exist or else in accordance with the College’s general marking criteria.

21. Particular features of the programme which help to reduce the barriers experienced by disabled students and ensure that the programme is accessible to all students who meet the entry requirements

Admissions
All students in receipt of an offer receive an information booklet on the support services offered by the College.

All students receiving offers who have indicated they have a disability in their application receive a letter from the School Disability Adviser with her contact details and offering the applicant the opportunity to discuss their requirements.

Offers are normally made without consideration of the predictions made by the UCAS referee.

Structure
The programme is offered on a part-time basis.

Publicity and programme handbook
These clearly communicate the key skills that will be required during the programme, the content of each module, the intended teaching methods to be used and module’s status (core/compulsory/optional).
## Programme approval 2006/07

**Teaching methods**  
A wide range of teaching methods is utilised (as demonstrated by box 17).

**Assessment**  
Advice has been taken from the Equality & Diversity Department to ensure assessment methods do not unfairly discriminate against students with disabilities. The College’s Special Examination Assessment Committee (SEAC) considers requests for adjustments to assessment to take account of learning and/or physical disabilities. Module outlines specify the assessment methods that will be used and explain that SEAC will need to be notified about requests for alternative assessment methods. The form that the alternative assessment will take has been specified for each module in advance.

**Feedback**  
Feedback on the programme is regularly collected from students about their learning experience. The information collected is used towards the on-going development and improvement of the programme. In particular, it has prompted closer working with ISS to ensure that subject resources are offered in a range of alternative formats wherever possible.

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PROGRAMME APPROVAL FORM
SECTION 2 – SUPPLEMENTARY INFORMATION

1. Programme name
BSc Biomedical Science/BSc Biomedical Science with Extra-Mural Year

2. If the programme is a joint award with an institution outwith the University of London has the necessary approval been sought from Academic Board?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Please attach a copy of the request to Academic Board

3. In cases of joint honours programmes please provide a rationale for the particular subject combination, either educational or academic

N/A

4. If the programme involves time outside the College longer than a term, please indicate how the time will be spent, the length of time out and whether it is a compulsory or optional part of the programme

<table>
<thead>
<tr>
<th>Year abroad</th>
<th>Year in employment</th>
<th>Placement</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time spent 1 year ...................................... optional … ............................

5. Please provide a rationale for any such time outside the College, other than that which is a requirement of a professional, regulatory or statutory body

Students have the option to undertake their second year at a partner Higher Education Institution overseas, to broaden their opportunities and experiences. During their year abroad students are expected to choose modules equivalent to the Year 2 core modules, in order to progress into the Final Year on their return.

Students can undertake an extramural placement in a research laboratory in the UK or overseas during the third year of the BSc Biomedical Science (with extra Mural Year). These are laboratories known to staff of the Department and have usually taken King’s students for many years. During their year away from College the student works under the direction of a senior member of the laboratory and also has a supervisor from the Department who makes at least one visit. The experience of working on a day to day basis in a research laboratory is invaluable both to those students who intend to pursue a career in research and for those who are still considering their career options.

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6. Please give details if the programme requires validation or accreditation by a professional, regulatory or statutory body

N/A