# THE PROGRAMME SPECIFICATION

## 1. Programme title and designation

<table>
<thead>
<tr>
<th>Molecular Genetics</th>
<th>Molecular Genetics with Extra-Mural Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single honours</td>
<td>Joint</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

## 2. Final award

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS Equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSc (Hons)</td>
<td>Molecular Genetics</td>
<td>360</td>
<td>180</td>
<td>N/A</td>
</tr>
<tr>
<td>BSc (Hons)</td>
<td>Molecular Genetics with Extra-Mural Year</td>
<td>420</td>
<td>210</td>
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</table>

## 3. Nested awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS Equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

## 4. Exit awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Title</th>
<th>Credit value</th>
<th>ECTS Equivalent</th>
<th>Any special criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG Cert</td>
<td>Biosciences</td>
<td>120-235</td>
<td>60-117</td>
<td>N/A</td>
</tr>
<tr>
<td>UG Dip</td>
<td>Biosciences</td>
<td>240-355</td>
<td>120-177</td>
<td>N/A</td>
</tr>
</tbody>
</table>

## 5. Level in the qualifications framework

| H |

## 6. Attendance

<table>
<thead>
<tr>
<th>Mode of attendance</th>
<th>Full-time</th>
<th>Part-time</th>
<th>DL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum length of programme</td>
<td>3 years</td>
<td>4 years (extra-mural year)</td>
<td>5 years</td>
</tr>
<tr>
<td>Maximum length of programme</td>
<td>10 years</td>
<td>10 years</td>
<td></td>
</tr>
</tbody>
</table>

## 7. Awarding institution/body

King’s College London

## 8. Teaching institution

King’s College London

## 9. Proposing department

Biochemistry

## 10. Programme organiser and contact details

Dr Shirley Coomber  
020 7848 4510  
shirley.coomber@kcl.ac.uk
11. UCAS code (if appropriate) | C400
12. Relevant QAA subject benchmark/ professional and statutory body guidelines | Biosciences
13. Date of production of specification | December 2002
| 8.12.06 (Implementation of CF)
14. Date of programme review | 2014/15

16. Educational aims of the programme

- To give an in depth understanding of fundamental aspects of genetics and to apply that knowledge to a wide variety of organisms including humans.
- To develop an understanding of other areas of life sciences such as biochemistry, immunology, microbiology and physiology and their relation to genetics, and to be aware of the importance of genetics as an academic and research discipline.
- To promote the acquisition of the knowledge of research methods in these subjects, laboratory skills, and the application these skills in the design and conduct of the student’s own experiments and research projects.
- To develop an understanding of genetics literature and skills in the writing of critical essays and reports.
- To equip graduates for a career in scientific research, industry or other fields.
- To 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:

**Knowledge and understanding**

The programme provides a knowledge and understanding of the following:

1. The scope of molecular genetics.
2. Fundamental terminology, relevant principles, theories and concepts of chemistry, cell biology, physiology, immunology, molecular biology, biochemistry and microbiology.
3. The major issues currently at the forefront of molecular genetic research and development.
4. Awareness of major issues currently at the forefront of Biochemistry research.
5. The ethical and safety issues surrounding research in Biochemistry.

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

1 & 2 achieved through lectures, lab work, formative assessments such as data handling, essays and lab write ups, and also reviewed and reinforced in tutorials.

3 encouraged throughout the years and consolidated and achieved during the third year as part of project discussions and seminar presentations. In addition a programme of molecular life science research seminars given by visiting speakers is available to all undergraduate students.

1-5 is encouraged throughout all years and is
Programme approval 2006/07

consolidated during the extra-mural year project and as part of the final year project discussions and seminar presentations.

Assessment:
Knowledge is assessed through a combination of coursework, seen/unseen written examinations, essays, MCQ’s, short answers, poster and oral presentations
The extra-mural year is assessed by the written dissertation and an oral presentation.

Skills and other attributes

Intellectual skills:
The programme fosters the ability of students to:

1. Think critically about their own work/research and to input into the design of future hypotheses and experiments
2. Collect, interpret and analyse data with a critical understanding of the appropriate contexts for their use through the study of primary research articles, and the student’s own data.
3. Use subject knowledge and understanding to explore and solve familiar and unfamiliar problems.
4. Recognise the moral and ethical issues of investigations and appreciating the need for ethical standards and professional codes of conduct.
5. Understand relevant scientific literature
6. Produce critical and original pieces of written work using appropriate research literature.

These are achieved through the following teaching/learning methods and strategies:
1, 5 & 6 achieved through the extra-mural year research project and final year project and advanced skills module.
2 & 3 realised through in module assignments such as data-handling, laboratory write ups and essays, as well as the final year project.
4 accomplished through the key skills modules.
5 & 6 encouraged throughout all years

Assessment:
Intellectual skills, understanding and independence of thought are developed and strengthened through all assessment that students undertake; coursework, seen and unseen written examinations, essays, MCQs, short answers, poster and oral presentations.

For those students taking the extra-mural year, some of these skills will be assessed in their written dissertation.

Practical skills:

1. Design and plan experimental research to test a stated hypothesis, giving due attention to all necessary controls.

These are achieved through the following teaching/learning methods and strategies:
1-3 are achieved through practical labs in the first and second year, extra-mural year and
2. Practical experience in contemporary molecular genetics techniques.
3. Carry out experimental work using practical molecular genetics techniques, or biochemical/ molecular techniques in exploring an immunological problem.
4. Appreciate the importance of risk assessment, good laboratory practice and safe handling of reagents, micro-organisms and genetically modified organisms.
5. Computer skills, to include e-mail, word processing, data presentation, spreadsheets and statistical analysis.

**Generic/transferable skills:**

1. Communication skills, both written and oral.
2. Problem solving skills, relating to qualitative and quantitative information, extending to situations where evaluations have to be made on the basis of limited information.
3. Numeric and computational skills.
4. Information retrieval skills, in relation to primary and secondary information sources, including on-line computer searches.
5. Information technology skills such as word processing, spreadsheet and database use, storing data and internet communication.
6. Interpersonal skills, relating to the ability to interact with other people and to engage in teamwork
7. Time management and organisational skills, such as the ability to plan and implement efficient and effective modes of working
8. Ability to work independently

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

1 achieved through the students’ presentation of data during their final year project and extra-mural year project, and published research data in seminars, essays, laboratory reports and poster presentations.
2 & 8 are encouraged throughout the years through all aspects of teaching and consolidate during work on the final year project.
3 built upon through the first year key skills system and subsequently strengthened through laboratory write ups, posters and project reports.
4 students are taught how to use appropriate databases during their first year.
5 addressed through the skills module and web-based tutorials associated with the European Computer Driving Licence (ECDL)
6 developed through group work in practicals, tutorials, and discussions.
7 addressed via tutorials and also available to students as an online study pack.
8 addressed in the extra mural year research project and final year project work

**Assessment:**
Transferable skills are assessed as part of coursework, written seen/unseen
examinations, essays, MCQs, short answers, poster presentations and oral presentation

The skills of the extra-mural students 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
At present no entirely relevant subject benchmark statements available, however the benchmark statements available at [http://www.qaa.ac.uk/](http://www.qaa.ac.uk/) for Biosciences, Biomedical Science, Chemistry and Pharmacy have all informed this programme specification. In addition the Molecular Biosciences and Organismal Biosciences subject overview reports have been taken into

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

**BSc Molecular Genetics**
Year 1: 6 compulsory modules at level 4.

Year 2: 3 compulsory modules (5BBB0231, 5BBB0214, 5BBB0224). Students must also take a combination of other compulsory and optional modules worth 45 credits selected from those available within the programme and from within the School of Biomedical Sciences. The 45 credits can include one 15 credit language module.

OR – Year Abroad - alternatively, year abroad in an associated institution, equivalent 120 credits. (modules approved by Programme Adviser)

Final Year: 2 compulsory modules and then students must also choose either a 15 credit Library project in Molecular Genetics, 30 credit Molecular Biology Practical Project or a 45 credit Extended Research Project in Molecular Science. Students then take the additional optional credits (to make a final total of 120 credits) selected from those available within the programme and from within the School of Biomedical Sciences. The optional credits can include one 15 credit Language Module.

**BSc Molecular Genetics with extra-mural year**

Year 1: 6 compulsory modules at level 4.

Year 2: 3 compulsory modules (5BBB0231, 5BBB0214, 5BBB0224). Students must also take a combination of other compulsory and optional modules worth 45 credits selected from those available within the programme and from within the School of Biomedical Sciences. The 45
credits can include one 15 credit language module.

OR – Year Abroad - alternatively, year abroad in an associated institution, equivalent 120 credits.
(modules approved by Programme Adviser)

Year 3. Extra-mural year. 1 core module (60 credits).

Final Year: 2 compulsory 15 credit modules and then students must also choose either a 15 credit
Library project in Molecular Genetics, 30 credit Molecular Biology Practical
Project or a 45 credit Extended Research Project in Molecular Science. Students then take the
additional optional credits (to make a final total of 120 credits) selected from those available within
the programme and from within the School of Biomedical Sciences. The optional credits can
include one 15 credit Language Module.

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

(c) maximum number of credits permitted at the lowest level
135 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)
45 credits

(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 Molecular Genetics, and take the
Common First Year.

In the second year students must take either 5BBY2001 or 5BBY2002. Optional modules as
approved by the programme Advisor.

- Students have the option to study abroad in year 2 and therefore must take equivalent 120
credits to include equivalent compulsory modules. Students are interviewed for suitability
and are required to achieve good results (60% >) in their first year exams. Students are able
to choose from a list of Institutions that have been approved by Academic Board.
Regulation A1 6.1. The students return to join the final year. The year
is pass/fail and the grades do not contribute to their final degree classification.

In the final year students must take 2 compulsory 15 credit modules, plus either 6BBB0313 or
6BBB0326. Students then take the additional optional credits (to make a final total of 120 credits) selected from those available within the programme and from within the School of Biomedical Sciences. The optional credits can include one 15 credit Language Module.

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%)

**Extra-mural year**
During second year, students may ask to be considered for an extra-mural year. If successful they will be transferred to the BSc Molecular Genetics with Extramural Year, and the placement will occur between the second and final year. The extra-mural year will be assessed by dissertation on a PASS/FAIL basis (40%), and the mark will not contribute to the final degree classification. Students who pass the dissertation will continue into final year still registered for the BSc Molecular Genetics with Extramural Year. Students who fail the dissertation will continue into final year registered for the BSc Molecular Genetics.

**Exit Awards**
The School will offer exit awards to students registering from 2012/13. Generic exit awards will be as follows to all undergraduate programmes.

- Students who achieve between 120 and 235 credits will be considered for the award of a UG Certificate in Bioscience (condoned fails not permitted).
- Students who achieve between 240 and 355 credits will be considered for the award of a UG Diploma in Biosciences (up to 15 credits of condoned fails permitted. A minimum of 90 level 5 or above credits required.
<table>
<thead>
<tr>
<th>Title</th>
<th>Credit level</th>
<th>Credit value</th>
<th>Status (I, C, O) for each type of programme</th>
<th>Progression</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4BBA1200 From Cells to Systems</td>
<td>4</td>
<td>15</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
</tr>
<tr>
<td>4BBB0108 Biochemistry &amp; Molecular Biology B</td>
<td>4</td>
<td>15</td>
<td>BSc with EMY</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>4BBB0109 Biochemistry &amp; Molecular Biology A</td>
<td>4</td>
<td>30</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
</tr>
<tr>
<td>4BBL0111 Physiological Systems</td>
<td>4</td>
<td>30</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
</tr>
<tr>
<td>4BBM0107 Fundamentals of Pharmacology</td>
<td>4</td>
<td>15</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>4BBY1000 Practice of Biomedical Science</td>
<td>4</td>
<td>15</td>
<td>BSc</td>
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<td>Written exam; coursework</td>
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<td>5BBB0231 Gene Cloning &amp; Expression A/B</td>
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<td>30</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<td>5BBB0214 Human &amp; Molecular Genetics A/B</td>
<td>5</td>
<td>30</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>5BBB0224 Protein Structure &amp; Function</td>
<td>5</td>
<td>15</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<td>5BBY2001 Cell Biology A</td>
<td>5</td>
<td>15</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>5BBY2002 Cell Biology A/B</td>
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<td>30</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>5BBBB1203 Immune System in Health &amp; Disease</td>
<td>5</td>
<td>15</td>
<td>BSc</td>
<td></td>
<td>Written exam; coursework</td>
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<tr>
<td>Optional module within the School</td>
<td>5</td>
<td>30</td>
<td>O</td>
<td></td>
<td>Written exam, coursework</td>
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<tr>
<td>Optional modern language</td>
<td>4,5</td>
<td>15</td>
<td>O</td>
<td></td>
<td>Written exam, coursework</td>
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<tr>
<td>6BBB0338 Biochemistry Extra-mural year dissertation</td>
<td>6</td>
<td>60</td>
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<td>Dissertation</td>
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<tr>
<td>6BBB0313 Extended Research Project in Molecular Science</td>
<td>6</td>
<td>45</td>
<td>Cp**</td>
<td></td>
<td>Project, Oral</td>
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<tr>
<td>6BBB0326 Molecular Biology Practical Project</td>
<td>6</td>
<td>30</td>
<td>Cp**</td>
<td></td>
<td>Project</td>
</tr>
<tr>
<td>6BBB0302 Library project in Molecular Genetics</td>
<td>6</td>
<td>15</td>
<td>Cp**</td>
<td></td>
<td>Project</td>
</tr>
<tr>
<td>6BBB0345 Molecular Genetics of Model Organisms</td>
<td>6</td>
<td>15</td>
<td>Cp</td>
<td></td>
<td>Written exam, coursework</td>
</tr>
<tr>
<td>6BBB0346 Advanced Molecular Genetics</td>
<td>6</td>
<td>15</td>
<td>Cp</td>
<td></td>
<td>Written exam, coursework</td>
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<tr>
<td>All other modules within School</td>
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<td>15,30</td>
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<td>Various</td>
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<tr>
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<td>15,30</td>
<td>O</td>
<td></td>
<td>Various</td>
</tr>
</tbody>
</table>

PAF Originally Approved by QA&AA: 18 April 2007
PAF Approved for 2008/9 by QA&AA: 13 August 2008
PAF Approved for 2009/10 by QA&AA: 3rd September 2009
PAF modified by ASQ re: exit awards: 15th April 2010
PAF finalised for 2011/12: 23 August 2011
PAF modified re: programme table: 17 February 2012
PAF modified re: exit awards, progression rules, module table: 22 August 2012
PAF finalised for 2012/13: 22 August 2012
Modern Language | 5,6 | 15, 30 | O | O | No | Various

* Students must take at least 15 credits from Cell Biology A, Cell Biology A/B (students cannot take Cell Biology A and Cell Biology A/B) and Immune System in Health & Disease.
** Students must take either Extended Research Project in Molecular Science or Molecular Biology Practical Project and Library project in Molecular Genetics.
# Students only taking the extra-mural year

20. Marking criteria

All modules will be marked in accordance with the School’s marking criteria where such exist, or else in accordance with the College’s generic 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).

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.
1. Programme name
BSc Molecular Genetics/BSc Molecular Genetics 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>
<td>X</td>
</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 academic 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 Molecular Genetics (with extra Mural Year). These are laboratories known to staff of the Biochemistry 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.

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

n/a
7. In cases where parts or all of the programme (other than those in box 4 above) are delivered either away from one of the College campuses and/or by a body or bodies external to the College please provide the following details

N/A