Why a Master in Applied Biosciences and Biotechnology?

The biotechnology sector has grown rapidly in recent years and there are increasing career opportunities worldwide for experienced graduates who have been trained in advanced molecular biosciences, systems and synthetic biology and ‘omics’ technologies, together with exposure to entrepreneurship and innovation. Demand for these skills is predicted to increase sharply over the next decade due to investment in the “green economy”, notably in the areas of bioenergy and industrial biotechnology. The objective of this course is to provide postgraduates equipped with the required interdisciplinary skills in applied biosciences and biotechnology for this growing sector.

In particular, the aims of MSc in Applied Biosciences and Biotechnology are:

- To equip graduates to pursue careers in bioscience and biotechnology either in industry or academic research.
- Produce graduates with an in-depth understanding of the core principles and methodologies underlying current biotechnological research.
- To enable students to develop the transferable qualities and skills required for employment or research in the biosciences sector.
- Produce bioscience graduates with training in relevant business and entrepreneurial skills.
- Provide a training in laboratory and research skills.
- Meet the global need for graduates who can successfully contribute to the rapidly developing industrial biotechnology sector.

A multidisciplinary course, rich of translational skills.

The course is composed of three elements: a taught element, a tutored dissertation element, and a research element.

The taught element in weeks 1-30 includes lectures, seminars, practicals and tutorials in the fields of Bioinformatics, Computing, Systems Biology, Biochemistry and Molecular Cell Biology. It also includes a large component of practical lectures, including computer based practicals and training in laboratory skills.

The dissertation will be carried out in weeks 31-35. Each student will be paired to a faculty member within the Department of Life Sciences, working closely to produce a publication quality dissertation on a cutting edge theme of Biosciences or Biotechnology. At the end of dissertation term, students will have the chance to present their dissertation work at a conference.

Finally, a full time laboratory based research project will be carried out from week 36 to 50. For almost three months students will experience first hand how exciting and rewarding research life can be. Imperial College London consistently ranks among the top 10 Universities in the World and students will have a chance to experience and directly contribute to top class research in Biosciences, Biotechnology and more.

A fourth component of the course runs throughout all its length and it is one of the most unique feature of this Master: the “innovations talks”. Innovation talks are seminars held by entrepreneurs,
policy makers, distinguished professors, from some of the leading firms, Universities and governmental organisations in the UK. In a series of seminars, students will meet and network with some of the most successful academics and entrepreneurs in the fields of Biotechnology and Biosciences. They will also learn about intellectual property, management and startups.

The Department of Life Sciences at Imperial College London

In 2014, the Department of Life Sciences at Imperial College London was judged by the British Government to be the top ranked university department in the UK for research intensity in Biological Sciences (see: REF2014, a nationwide assessment of research excellence, with an intensity-weighted GPA of 3.26 http://www.timeshighereducation.co.uk/features/ref-2014-rerun-who-are-the-game-players/2017670.article). The Department embraces the full breadth of modern life science activity and comprises one of the largest life science groups in Europe, with approximately 100+ academic staff, 180 research fellows and post-doctoral researchers, 200+ PhD students and 180+ Masters students. We have a vibrant and internationally leading research programme that spans levels of organisation from atoms to the biosphere, that strongly supports multidisciplinary collaborations and that actively fosters the development of new fields. The Department's research and teaching activities are funded by a wide variety of research councils, charities and industries bodies, with the value of current external research grants totaling £70+ million. The department teaches two major undergraduate degrees in Biology and Biochemistry and a wide range of Masters-level courses aligned to the divisional strengths. The Department is based on two campuses: in South Kensington (Sir Alexander Fleming, Sir Ernst Chain and Flowers buildings) and Silwood Park near Ascot in Berkshire.

The South Kensington Campus

All of the MSc activities will be carried in the South Kensington Campus, the main research Campus of Imperial College London. The Campus is in the heart of 'Albertopolis' and is home to a huge range of architectural styles from the Edwardian Royal School of Mines building to the ultra-modern Norman Foster-designed Business School. There's plenty of green space too, including a beautiful landscaped square, with our famous Queen's Tower at one end.
Dates and Structure of terms

The MSc is a full time, 12 month course beginning in October and ending the last week of September. Formal teaching and learning activities are scheduled between 09.00 and 18.00, Monday to Friday throughout the year, except when the College is closed for the holidays.

Taught modules run from October to mid-April and will be examined in January (one written exam) and April (two written exams). Dates will be confirmed when the relevant modules are underway.

Assessed course-work consists of a laboratory skills write-up, an essay and write-ups of innovations theme activities.

Innovation theme activities will run from October to mid-July.

The Tutored-Dissertation followed by the Mini-Conference will take place over a five-week period from the end of April and will finish with a viva.

The laboratory-based Project will be undertaken from the beginning of June with the written report being submitted at the end of August. This will be followed by a project-related viva. The Exam Board will meet towards the end of September after the completion of exit vivas with external examiners.

Academic team and contacts:

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