Programme Specification

1 Awarding body | University of London
2 Teaching Institution | Birkbeck College
3 Programme Title(s) | Postgraduate Certificate in Protein Crystallography (PX)
4 Programme Code(s) | TPCCRPRO_C
5 UCAS code (if applicable) | N/A
6 Home Department | Biological Sciences
7 Exit Award(s) | N/A
8 Duration of Study (number of years) | 1-year
9 Mode of Study | FT | PT | √ | DL | √
10 Level of Award (FHEQ) | Level: 7

11 Other teaching depts or institution (or not applicable) | NOT APPLICABLE
12 Professional, Statutory Regulatory Body(PSRB) details (or not applicable) | NOT APPLICABLE
13 QAA Benchmark Group (or not applicable) | NOT APPLICABLE

14 Program Rationale & Aims

Main Aims

Protein crystallography is no longer solely the domain of the mathematician and physicist, but that of the biologically-orientated scientist. It is a multidisciplinary technique which overlaps with biochemistry, molecular biology, bioinformatics, biophysics and organic chemistry. For a proper understanding of biological function, a detailed knowledge of the three-dimensional structure of biological macromolecules and their interactions with ligands and the aqueous environment is required.

Protein crystallography (or structural molecular biology), is powerful in that it can identify the residues determining substrate specificity and interactions with other macromolecules at the atomic level, allowing the targeting of site-directed mutagenesis experiments and the design of selective inhibitors, so important in industry.

This postgraduate course is an excellent introduction to protein crystallography. It is designed for those who are interested in pursuing a career in this exciting and rapidly expanding field, especially in the pharmaceutical industry, or for those who would like to expand and update their existing scientific knowledge.

Up-to-date descriptions of the background, methods and techniques of protein crystallography are explained, and the programme gives the biologically-orientated scientist a mainly non-mathematical insight into how protein crystal structures are determined and how results should be judged.
Distinctive Features

- An innovative course taught entirely using the internet. You study part-time in your own time, wherever you are in the world. Many of our students have full-time jobs or extensive family responsibilities.
- Taught within the Department of Biological Sciences which, with University College London, is part of the leading research-based Institute of Structural and Molecular Biology. Several of the department’s world-class researchers contribute to the course.
- May be taken as a stand-alone certificate course or as part of our acclaimed internet-based MSc Structural Molecular Biology.

Entry Criteria

Degree in science, computing or mathematics, or equivalent qualification, or relevant work experience.

Learning Outcomes

On successful completion of this course, you should be able to:

- demonstrate comprehensive knowledge of the key concepts involved in protein structure determination along with practical examples and applications
- analyse the underlying theories frequently not found in the literature
- engage with the principals underpinning protein crystallography and assess when they might be appropriately applied.

Learning, teaching and assessment methods

All teaching is internet-based. The course material is released in several sections on a dedicated, password-protected website.

You must successfully complete both coursework and the written exam, which may be taken at a local examination centre.

Programme Description

The programme introduces up-to-date descriptions of the background, methods and techniques of protein crystallography, and the programme gives the biologically-orientated scientist a mainly non-mathematical insight into how protein crystal structures are determined and how results should be judged.

You will learn:

- the fundamentals of protein structure
- x-ray diffraction and symmetry
- how to determine structures using protein crystallography
- how to judge the quality of co-ordinates.
Programme Structure

Part Time 1-year programme

Year 1

<table>
<thead>
<tr>
<th>Level</th>
<th>Module Code</th>
<th>Module Title</th>
<th>Credits</th>
<th>Status</th>
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<tr>
<td>7</td>
<td>CRY523D7</td>
<td>Protein Crystallography (PX)</td>
<td>60</td>
<td>Compulsory</td>
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Regulations

- **Admissions**
  This programme adheres to the College Admissions Policy

- **If the programme has additional information re: Admissions please state here:**
  NOT APPLICABLE

- **Credit Transfer**
  NOT APPLICABLE
  Accredited Prior Learning will be considered in line with the College Policy on Accredited Prior Learning
  [http://www.bbk.ac.uk/mybirkbeck/services/rules/AccreditedPriorLearning.pdf](http://www.bbk.ac.uk/mybirkbeck/services/rules/AccreditedPriorLearning.pdf)

- **Programme Regulations**
  This programme adheres to the College Common Awards Scheme
  [http://www.bbk.ac.uk/mybirkbeck/services/rules/casregs.pdf](http://www.bbk.ac.uk/mybirkbeck/services/rules/casregs.pdf)

- **Programme Specific Regulations (or not applicable)**
  NOT APPLICABLE

Student Support and Guidance

All Birkbeck students have access to a range of student support services, details can be found on our website here: [http://www.bbk.ac.uk/mybirkbeck/services/facilities](http://www.bbk.ac.uk/mybirkbeck/services/facilities)

Methods of Enhancing Quality and Standards

The College has rigorous procedures in place for the monitoring and enhancing its educational provision. This includes regular monitoring of programmes drawing on feedback from various sources including external examiner’s reports, student feedback, student achievement and progression data. In addition, departments are reviewed every four to five years through the internal review process that includes external input.

For more information please see the Academic Standards and Quality website [http://www.bbk.ac.uk/registry/about-us/operations-and-quality](http://www.bbk.ac.uk/registry/about-us/operations-and-quality).

Programme Director

Dr Tracey Barrett

Start Date (term/year)

Autumn 1997

Date approved by TQEC

Spring 1997

Date approved by Academic Board

Summer 1997

Date(s) updated/amended

November 2014