ASTON UNIVERSITY PROGRAMME SPECIFICATION 2014-15

Programme Title	Biological Chemistry
UCAS/JACS Code	C720
School/Subject Area	School of Engineering and Applied Science Chemical Engineering and Applied Chemistry
Final Award	BSc
Interim Awards	Certificate of Higher Education Diploma of Higher Education
Mode(s) of Study	Full time Sandwich [Optional]
Normal Length of Programme	3 years [Full time] 4 years [Sandwich]
Total Credits	360 credits [Full time] 480 credits [Sandwich]
Programme Accredited By	N/A
Dates Programme Specification Written and Revised	May 2005, July 2006, June 2007, May 2008, October 2008, August 2009, February 2010, August 2010, August 2011, August 2012, June 2013, September 2014, February 2015
Education Aims of the Programme	• To provide students with the opportunities to realise their academic potentials through relevant and planned learning experiences. • To provide a thorough grounding in basic principles of chemical biology. • To provide students with appropriately structured curricula, combining teaching in theoretical and knowledge-based principles with practical skills training. • To produce graduate scientists with skills and knowledge of the interface between chemistry and biology, that are in demand by employers, and who are able to make a valuable contribution to society in general. • To offer students the opportunity to obtain relevant industrial experience by providing the option of a sandwich year.
Relevent Subject Benchmark Statements and other External and Internal	• UK Quality Code Part A.1 (2011) • QAA subject benchmark for Chemistry

Reference Points used to inform programme outcomes	

Programme Structures and Requirements: Levels, Modules and Credits Stage 1						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Cell Biology	10	4	BY1CB1	Core	Yes	No
Molecular Biology	10	4	BY1MB1	Core	Yes	No
Microbiology	20	4	BY1MI1	Core	Yes	No
Innovation, Creativity and Employability in Industry	10	4	CE1010	Core	Yes	No
Organic Chemistry I	10	4	CH1102	Core	Yes	No
Physical Chemistry I	10	4	CH1103	Core	Yes	No
Molecular Transformations	10	4	CH1104	Core	Yes	No
States of Matter	10	4	CH1105	Core	Yes	No
Introduction to Biological Chemistry	10	4	CH1106	Core	Yes	No
Inorganic Chemistry I	10	4	CH1111	Core	Yes	No
Choose 10 credits from the following options						
Basic Mathematics	10	4	AM10BM	Option	Yes	No
Transition Mathematics for Engineers	10	4	SE11EM	Option	Yes	No
TOTAL	120					

Programme Structures and Requirements: Levels, Modules and Credits Stage 2						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Introduction to Immunology	10	4	BY1IM1	Core	Yes	
Molecular Pathology	20	5	BY2PA1	Core	Yes	
Molecular Genetics	10	5	BY2MB1	Core	Yes	
Chemical Analysis	10	5	CH2101	Core	Yes	
Organic Chemistry II	20	5	CH2102	Core	Yes	

Biological Chemistry	10	5	CH2104	Core	Yes	
Polymer I	10	5	CH2123	Core	Yes	
Inorganic Chemistry II	10	5	CH2126	Option	Yes	
Choose 20 credits from the following options						
Physical Chemistry II	20	5	CH2107	Option	Yes	
Polymer II	10	5	CH2125	Option	Yes	
Electrochemistry and Aqueous Solutions	10	5	CH2127	Option	Yes	
Introduction to Business Management	10	4	SE1500	Option	Yes	
TOTAL	120					

Programme Structures and Requirements: Levels, Modules and Credits
Stage 3 P

Module Title	Credits	Level	Module Code	Core/Option	Condonable	Prerequisites
Choose 120 credits from the following options						
EAS Study Placement Year	120	P	SEP001	Option	No	
EAS Industrial Placement Year	120	P	SEP002	Option	No	
TOTAL	120					

Programme Structures and Requirements: Levels, Modules and Credits
Stage F

Module Title	Credits	Level	Module Code	Core/Option	Condonable	Prerequisites
Bioethics	10	6	BY3BE1	Core		
Applied Microbial Technology	10	5	BY2AM1	Core		
Biomedical Technology	10	5	BY2BT2	Core		
Toxicology	10	6	BY3TO1	Core		
Physical Chemistry III	20	6	CH3008	Core		
Advances in Biomaterals Science	10	6	CH3102	Core		
Organic Chemistry III	10	6	CH3103	Option		
Literature Research Project	10	6	CH3117	Core		
Advances in Lipid Chemistry	10	6	CH3109	Core		

Choose 20 credits from the following options						
Cataysis	10	6	CE3010	Option		
Advanced NMR Techniques	10	6	CH3114	Option		
Particle Processing	10	6	CE3013	Option		
				Option		
TOTAL	120					

Programme Outcomes, Learning and Teaching and Assessment Strategies

Knowledge and Understanding			
	On successful completion of their programme students, are expected to have knowledge and understanding of:	**Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated**	
		Learning and Teaching Methods	**Assessment Methods**
1	Basic mathematics, chemistry and biology that underpin chemical biology	Lectures, tutorial classes, practical laboratory work, independent and group project work, independent study For the sandwich students, an agreed programme of professional experience and training	Examinations, written continuous assessment [in the form of laboratory and project reports, essays, solved problems, and dissertations], supervisor assessed project work, oral examinations and presentations. For sandwich students, written reports by the student, the academic and industrial supervisor's reports will also be considered.
2	Technological and engineering applications of chemical biology		
3	Laboratory techniques applicable to chemical biology		
4	Business and Management techniques		
5	Fundamental concepts and principles of chemical biology		
6	Sandwich students only - the relevance of the programme's discipline-specific and generic content to the world of work		

Intellectual Skills			
	On successful completion of their programme students, are expected to have knowledge and understanding of:	**Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated**	
		Learning and Teaching Methods	**Assessment Methods**
1	Analyse problems in biological chemistry & select appropriate methods to solve such problems	Lectures, tutorial classes, practical laboratory work, independent and group project work, independent	Examinations, written continuous assessment [in the form of laboratory and project reports, essays,
2	Evaluate & integrate information		

	from a wide variety of sources	study	solved problems, and dissertations], supervisor assessed project work, oral examinations and presentations.
3	Plan, conduct, evaluate & report on a programme of work leading to an end product or process which utilises a knowledge and understanding of chemical biology		

Professional Skills			
	On successful completion of their programme students, are expected to have knowledge and understanding of:	**Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated**	
		Learning and Teaching Methods	**Assessment Methods**
1	Plan and carry out a series of experiments	Lectures, tutorial classes, practical work [both assessed and unassessed] For sandwich students, an agreed programme of professional experience and training	Examinations, continuous assessment [in the form of laboratory and project reports, essays, solved problems, and dissertations], supervisor assessed project work, oral examinations and presentations. For sandwich students, written reports by the student, the academic and industrial supervisor's reports will also be considered.
2	Carry out a competent research project		
3	Prepare technical reports and presentations		
4	Use appropriate software packages		

Transferable Skills			
	On successful completion of their programme students, are expected to have knowledge and understanding of:	**Learning, Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated**	
		Learning and Teaching Methods	**Assessment Methods**
1	The ability to communicate effectively in writing, orally and through technical diagrams.	Skills are developed through practical work, group and personal tutorial classes, practical work and projects and the placement option.	Examinations, continuous assessment [in the form of laboratory and project reports, essays, solved problems, and dissertations], supervisor assessed project work, oral examinations and presentations.
2	Team working		
3	Problem solving skills		
4	Time management skills		
5	Independent learning skills to facilitate professional development		

6	Study skills		Many of these skills are assessed indirectly via other learning outcomes

Entry Requirements	1. The general entry requirements of the School/programme are GCSEs English and Mathematics at Grade C; 300/320 points [BBB/ABB] at A Level 2. In addition to satisfying the general entry requirements, candidates must satisfy any specific entry requirements for the programme, as approved by the School Learning and Teaching Committee. Chemistry A Level or equivalent is preferred. Two AS level passes may be substituted for one other A Level subject. Other subjects and other qualifications of equivalent standing may be acceptable alternatives. 3. Students already reading another degree programme at Aston University may be allowed to transfer to this programme, with the agreement of the School's Associate Dean of Undergraduate Programmes.
Programme Regulations	**Attendance requirements** 1. In order to qualify for the award of the degree a student must have attended the required proportion of tutorials, seminars, practical classes and lectures specified by the School's Executive Dean. The Programme Handbook provides details of procedures for monitoring attendance and dealing with poor attendance. 2. In the case of repeated unexcused absence over a period of two weeks or more, disciplinary proceedings may be instituted in the form of an official warning letter requiring attendance. If there is no response to this letter or satisfactory attendance is not resumed, the Executive Dean may require the student to withdraw from the programme. 3. Modules where attendance forms part of the assessment are indicated in the programme structure. 4. Students are required to complete and pass 120 credits in each year of study. In the first year students will be streamed onto certain Maths modules, according to knowledge and aptitude. **Industrial Placement Year** Each student is required to submit satisfactory reports of the work carried out during the placement stage and a poster presentation. This work will be assessed as one module, worth 120 credits at level P. The placement is graded and does contribute to the classification of the degree awarded. Satisfactory completion of the assessment requirements are given in the CEAC Industrial Placement Handbook.

General Regulations (http://www1.aston.ac.uk/registry/for-staff/regsandpolicies/general-regulations/) and the Regulations for the programme (above) take precedence over other information sources such as student handbooks if there is a conflict. If there is a conflict between General Regulations and Programme Regulations then General Regulations take precedence unless an exemption has been approved.

This specification provides a concise summary of the main features of the programme and the threshold learning outcomes that a student might normally be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. **The individual modules included in the programme may differ from those included in this programme specification as our programmes are subject to continuous review**. Information on admissions requirements and career opportunities is available in the relevant prospectus. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the appropriate module guides and programme handbook(s) which are available to students on enrolment.