

BSC (HONS) NEUROSCIENCE

Overview

NFQ Level 8, Major Award

Students enter Second Science Neuroscience First Science Area of Study: Biological and Chemical Sciences (CK402) (<https://ucc-ie-public.courseleaf.com/programmes/bscbf/>) provided they have passed First Science.

BSc Ordinary Degree - NFQ Level 7, Major Award

Students who pass Third Year may choose not to proceed to Fourth Year and may opt instead to be conferred with a BSc Ordinary Degree (<https://ucc-ie-public.courseleaf.com/programmes/bscpas/>).

Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

Programme Requirements

Code	Title	Credits
Year 1		
Students take 60 credits as follows:		
<i>Core Modules</i>		
BC1001	Introduction to Biochemistry and the Biological Basis of Disease	5
BL1002	Cells, Biomolecules, Genetics and Evolution	5
BL1004	Physiology and Structure of Plants and Animals	5
CM1200	Fundamentals of Modern Chemistry Part 1	10
CM1201	Fundamentals of Modern Chemistry Part 2a	10
MA1001	Calculus for Science Part 1	5
MA1002	Calculus for Science Part 2	5
MB1003	Microbiology in Society	5
PY1010	Physics for Biological and Chemical Sciences	10
Year 2		
Students take 60 credits as follows - all listed core modules (55 credits) and 5 credits of elective modules:		
<i>Core Modules</i>		
Biochemistry		
BC2001	Biomolecules	5
BC2002	Principles of Metabolic Pathways	5
Biotechnology		
BT2001	Introduction to Biotechnology	5
Molecular Biology		
ML2001	Introductory Molecular Biology	5
Microbiology		
MB2005	Fundamentals of Microbiology	5
MB2006	Principles of Microbiology	5
Neuroscience		
AN2003	Principles of Human Structure	5
AN2020	Introduction to Neuroscience, the Brain and Behaviour	5
Physiology		
PL2021	Introductory Physiology I	5
PL2022	Introductory Physiology II	5

Statistics		
ST2001	Introduction to Biostatistics	5
<i>Elective Modules</i>		
Students take modules to the value of 5 credits from the following:		5
Semester 1		
Chemistry		
CM2001	Main Group and Transition Element Chemistry	
CM2002	Fundamentals of Organic Chemistry	
CM2003	Energetics and Kinetics	
Plant Science		
PS2001	Introduction to Plant Biotechnology	
Zoology		
ZY2000	Vertebrate Diversity	
Semester 2		
Chemistry		
CM2007	Spectroscopy	
Ecology		
AE2001	Fundamentals of Ecology	
Year 3		
Students take 60 credits as follows – all listed core modules (50 credits) and 10 credits of elective modules:		
<i>Core Modules</i>		
AN3001	Research Methodology in Neuroscience and Biomedical Science	5
AN3003	Neurobiology of Regulatory Systems	5
AN3004	Human Regional Neuroanatomy	5
AN3011	Library Project	5
AN3012	Human Nervous System	10
AN3013	Neurobiology of Disease	5
BC3006	Molecular Biology	5
BC3008	Biochemistry of the Central Nervous System	5
PT3001	Introduction to Pharmacology	5
<i>Elective Modules</i>		
Students take modules to the value of 10 credits from the following:		10
AN3009	Human Embryology and Developmental Anatomy (5)	
AP2043	Biological Psychology II (5)	
AP2044	Applied Cognition (5)	
PL3020	Neurophysiology (5)	
<i>Optional Module</i>		
AN4015	Work Placement (5) ¹	
Year 4		
Students take 60 credits as follows:		
<i>Core Modules</i>		
AN4016	Neurodevelopmental Biology Approaches to Brain Repair.	5
AN4017	Prenatal and Perinatal Exposures and the Developing Brain.	5
AN4009	Behavioural and Cognitive Neuroscience	5
AN4011	Research Project	20
AN4012	Medical Imaging and Biomedical Devices in the Neurosciences	5
AN4013	Advanced Topics in Neuroscience	5

AN4014	Advanced Research Methodology in Neuroscience	5
BC4011	Cell and Molecular Basis of Neurodegenerative disease	5
PT4005	Neuropharmacology	5
Total Credits		240

¹ Students electing to take this optional module must secure a work placement relevant to the discipline, to be undertaken in June-August (minimum four weeks) subject to the approval of the Department of Anatomy & Neuroscience. AN4015 Work Placement is not included for progression to subsequent year and is not counted toward the final degree award. The result obtained in AN4015 Work Placement will be recorded on the student's transcript.

Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

Programme Learning Outcomes

Programme Learning Outcomes for BSc in Neuroscience (NFQ Level 8, Major Award)

On successful completion of this programme, students should be able to:

- Use fundamental knowledge of anatomy, physiology, biochemistry, pharmacology and applied psychology to derive and apply solutions which promote a better understanding of the function of the human nervous system, the diseased or injured human nervous system, and its repair;
- Identify and explain suitable molecular, cellular and behavioural methodologies for applications in research in order to increase our knowledge of Neuroscience;
- Design, plan and execute an experiment or study to test a hypothesis in Neuroscience;
- Interpret research findings and perform appropriate statistical analysis to enable effective communication of research in both written and oral formats;
- Critically analyse scientific literature published in the field of Neuroscience;
- Work effectively as an individual, in teams and in multidisciplinary settings having developed the capacity to undertake lifelong learning and critical thinking;
- Communicate effectively with the scientific community and appreciate the importance of contributing to the public understanding of science and neuroscience in particular.