BSC (HONS) PHYSICS

Programme Requirements

Code	Title	Credits
Year 1		
Students take **60** credits from one of the following Options:		
Option 1		
Students take **60** credits as follows - all listed core modules (**40** credits) and **20** credits of elective modules:		
Core Modules		
AM1052	Introduction to Mechanics	5
PY1052	Introductory Physics I	10
PY1053	Introductory Physics II	10
MA1011	Mathematical Methods I	5
MA1012	Mathematical Methods II	5
ST1051	Introduction to Probability and Statistics	5
Elective Modules		
Students take modules to the value of **20** credits from the following:		20
AM1053	Introduction to Mathematical Modelling	5
AM1054	Mathematical Software	5
BL1002	Cells, Biomolecules, Genetics and Evolution	5
BL1004	Physiology and Structure of Plants and Animals	5
BL1006	Habitats and Ecosystems	5
CM1006	Introduction to Chemistry for Physicists and Mathematicians	10
CM1007	Introduction to Chemistry for Physicists	15
CS1061	Programming in C	5
CS1065	Computer Applications Programming	5
CS1068	Introductory Programming in Python	5
MA1057	Introduction to Abstract Algebra	5
PY1054	Special Topics in Physics	5
ST1050	Statistical Programming in R	5
Option 2		
Students take **60** credits as follows - all listed core modules (**45** credits) and **15** credits of elective modules:		
Core Modules		
PY1052	Introductory Physics I	10
PY1053	Introductory Physics II	10
AM1052	Introduction to Mechanics	5
MA1058	Introduction to Linear Algebra	5
MA1059	Calculus	5
MA1060	Introduction to Analysis	5
ST1051	Introduction to Probability and Statistics	5
Elective Modules		
Students take modules to the value of **15** credits from the following:		15
AM1053	Introduction to Mathematical Modelling	
AM1054	Mathematical Software	
BL1002	Cells, Biomolecules, Genetics and Evolution	
BL1004	Physiology and Structure of Plants and Animals	
BL1006	Habitats and Ecosystems	
CM1006	Introduction to Chemistry for Physicists and Mathematicians	
CM1007	Introduction to Chemistry for Physicists	
CS1061	Programming in C	
CS1065	Computer Applications Programming	
CS1068	Introductory Programming in Python	
MA1057	Introduction to Abstract Algebra	
PY1054	Special Topics in Physics	
ST1050	Statistical Programming in R	
*Option 3 (for students who entered **prior to 2023/24**)*		
Students take **60** credits as follows – all listed core modules (**50** credits) and **10** credits of elective modules:		
Core Modules		
PY1052	Introductory Physics I	10
PY1053	Introductory Physics II	10
MA1058	Introduction to Linear Algebra	5
MA1059	Calculus	5
MA1060	Introduction to Analysis	5
CM1007	Introduction to Chemistry for Physicists	15
Elective Modules		
Students take modules to the value of **10** credits from the following:		10
BL1002	Cells, Biomolecules, Genetics and Evolution	
BL1004	Physiology and Structure of Plants and Animals	
BL1006	Habitats and Ecosystems	
Year 2		
Physics		
Students take 60 credits as follows - all listed core modules (**55** credits) and **5** credits of elective modules:		
Core Modules		
PY2101	Classical Mechanics	5
PY2102	Introduction to Quantum Physics	5
PY2103	Electrostatics and Magnetostatics	5
PY2104	Introduction to Thermodynamics and Statistical Physics	5
PY2105	Introduction to Computational Physics	5
PY2106	Introduction to Astrophysics and Special Relativity	5
PY2107	Experimental Physics I	5
PY2108	Experimental Methods I	5
Applied Mathematics		
AM2060	Object Oriented Programming with Applications	5
AM2071	Transform and Variational Methods	5
Mathematics		
MA2071		
Elective Modules		
Students take modules to the value of **5** credits from the following:		5
AM2052	Mathematical Modelling (5)	
MA2054	Ordinary Differential Equations (5)	
MA2055	Linear Algebra (5)	
Year 3		
Physics		
Students take 60 credits as follows - all listed core modules (**50** credits) and **10** credits of elective modules:		
Core Modules		
PY3101	Optics	5
PY3102	Quantum Mechanics	5

PY3103	Electromagnetism	5
PY3104	Statistical Thermodynamics	5
PY3105	Introduction to Condensed Matter Physics	5
PY3106	Nuclear and Particle Physics	5
PY3107	Experimental Physics II	5
PY3108	Experimental Methods II	5
Minors		
AM2061	Computer Modelling and Numerical Techniques	5
AM3051	Vector and Tensor Methods	5
Elective Modules		
Students take modules to the value of **10** credits from the following:		10
AM3052	Introduction to Fluid Mechanics and Wave Theories (5)	
AM3064	Topics in Applied Mathematics (5)	
PY3109	Observational Astrophysics (5)	
Year 4		
Physics		
Students take 60 credits as follows - all listed core modules (**10** credits) and **50** credits of elective modules:		
Core Modules		
PY4115	Research Project	10
Elective Modules		
Students take modules to the value of **50** credits from the following:		50
AM3052	Introduction to Fluid Mechanics and Wave Theories (5)	
PY4102	Advanced Quantum Mechanics (5)	
PY4103	Advanced Electromagnetism (5)	
PY4104	Advanced Condensed Matter Physics (5)	
PY4105	Atomic and Molecular Physics (5)	
PY4106	Relativistic Quantum Theory (5)	
PY4108	Introduction to Lasers and Photonics (5)	
PY4109	Advanced Computational Physics (5)	
PY4110	Stars and the Interstellar Medium (5)	
PY4111	Galactic and Extragalactic Astrophysics (5)	
PY4112	Gravitation and Cosmology (5)	
PY4113	Experimental Physics III (5)	
PY4117	Quantum Optics (5)	
PY4118	Physics of Semiconductor Devices (5)	

[1] If AM3062 is not taken in Third Science then it must be taken in Fourth Science.

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*.