Programme Regulations: 2024/25

Degree of Master of Physics with Honours with Theoretical Physics - UCAS Code: F344
Degree of Master of Physics with Honours with Theoretical Physics with Placement Year - Code: 1180U
Degree of Master of Physics with Honours in Theoretical Physics with International Study Year – Code: 1847U

Exit Awards Degree Titles:
Degree of Master of Physics with Honours in Science (Theoretical Physics) - code 1567U*
Degree of Master of Physics with Honours in Science (Theoretical Physics) with Placement Year - code 1568U*

Notes
(i) These programme regulations should be read in conjunction with the University's Taught Programme Regulations.
(ii) All optional modules are offered subject to the constraints of the timetable and to any restrictions on the number of students who may be taught on a particular module. Not all modules may be offered in all years and they are listed subject to availability.
(iii) Unless otherwise stated under 'Type', modules are not core.
(iv) A compulsory module is a module which a student is required to study.
(v) A core module is a module which a student must pass, and in which a fail mark may neither be carried nor compensated; such modules are designated by the board of studies as essential for progression to a further stage of the programme or for study in a further module.
(vi) All modules are delivered in Linear mode unless stated otherwise as Block, eLearning or distance learning.
(vii) Students are not recruited to 1180U. Rather a F344 candidate may transfer to 1180U by the end of week 5 of Semester 2 of Stage 3, subject to the agreement of the Degree Programme Director.
*(viii) *The Degree of Master of Physics with Honours in Science (Theoretical Physics), code 1567U, and the Degree of Master of Physics with Honours in Science (Theoretical Physics) with Placement Year, code 1568U, are both unaccredited exit awards for candidates who do not meet the accreditation requirements of Degree of Master of Physics with Honours with Theoretical Physics, code F344, and Degree of Master of Physics with Honours with Theoretical Physics with Placement Year, code 1180U.*

1. Stage 1

All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
PHY1020	Dynamics	10	0	10	4		
PHY1021	Introductory Astrophysics	10	10	0	4		
PHY1024	Introductory Electromagnetism	10	0	10	4		
PHY1025	Introductory Quantum Mechanics	10	0	10	4		
PHY1030	Laboratory Physics 1	20	10	10	4		
PHY1037	Vibrations, Waves & AC Theory & Introduction to Solid State Materials	20	10	10	4		
PHY1038	Introductory Algebra	10	10	0	4		
PHY1040	Introductory Calculus and Differential Equations	20	20	0	4		
PHY1041	Multivariable Calculus	10	0	10	4		
PHY1999	Academic Skills and Tutoring (Physics)	0	0	0	4		

2. Stage 2

(a) All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
PHY2020	Principles of Quantum Mechanics	10	10	0	5		
PHY2021	Principles of Electromagnetism	10	0	10	5		
PHY2024	Principles of Materials & Solid-State Physics	10	0	10	5		
PHY2026	Vector Calculus	10	10	0	5		
PHY2029	Introduction to Observational Astronomy	10	0	10	5		
PHY2031	Differential Equations, Transforms and Waves	10	0	10	5		
PHY2032	Optics	10	10	0	5		
PHY2033	Fluid Dynamics I	10	0	10	5		
PHY2034	Computational Methods & Professional Skills for Theoretical Physics	10	10	0	5		
PHY2036	Thermodynamics & Statistical Mechanics	20	10	10	5		
PHY2039	Scientific Computation with Python	10	10	0	5		

(b) To progress to Stage 3 of this degree programme, candidates are required to obtain an average over all modules taken at Stage 2 of at least 60.

3. Stage 3

(a) All candidates shall take the following compulsory modules:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
PHY3020	Advanced Quantum Mechanics	10	10	0	6		
PHY3022	Relativity and Fundamental Particles	10	10	0	6		
PHY3023	Advanced Materials & Solid-State Physics	10	10	0	6		
PHY3024	Atoms, Molecules and Nuclei	10	0	10	6		
PHY3025	Group Project	10	10	0	6		
PHY3029	Variational Methods & Lagrangian Dynamics	10	0	10	6		
PHY3032	Advanced Electromagnetism	10	0	10	6		
PHY3041	Fluid Dynamics II	10	10	0	6		

(b) All candidates shall choose four optional modules from the following list:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
CEG3707	Geohazards & Deformation of the Earth	10	10	0	6		
PHY3033	Advanced Astronomy	10	10	0	6		

PHY3035	Methods for Differential Equations	10	10	0	6		
PHY3036	Partial Differential Equations	10	0	10	6		
PHY3037	Photonics	10	0	10	6		
PHY3040	Stellar Structure & Evolution	10	10	0	6		
PHY3042	Cosmology	10	0	10	6		
PHY3043	Radiative Transfer and High Energy Astrophysics	10	0	10	6		
PHY3047	Instabilities	10	10	0	6		
PHY3048	Mathematical Biology	10	0	10	6		

(c) To progress to Stage 4 of this degree programme, candidates are required to obtain an average over all modules taken at Stage 3 of at least 60.

4. Intercalating Year

(a) Careers Placement Year

On completion of Stage 3 and before entering Stage 4, candidates may as part of their studies for the degree spend a year in a placement with an approved organisation. Permission to undertake a placement is subject to the approval of the Degree Programme Director. Students who are required to re-sit their Stage 3 assessment must delay the start of their placement until they have done so. Students who fail Stage 3 may not complete a placement year.

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
NCL3000	Career Service Placement Year Module	120	60	60	6		

(b) International Study Year

On completion of Stage 3 and before entering Stage 4, candidates may spend the equivalent of one academic year abroad at an appropriate exchange partner institution. Permission to undertake a year abroad is subject to the approval of the Degree Programme Director. Students who are required to re-sit their Stage 3 assessment must delay the start of their year abroad until they have done so. Students who fail Stage 3 may not complete a year abroad.

Code	*Descriptive title*	*Total Credits*	*Credits Sem 1*	*Credits Sem 2*	*Level*	*Mode*
ISY3000	International Study Year Module	120	60	60	6	

5. Stage 4

(a) All candidates shall take the following compulsory module:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
PHY8046	Extended Project - MPhys Physics	40	20	20	7	Core	
PHY8042	Quantum Fluids	20	10	10	7		
PHY8043	General Relativity	20	10	10	7		
PHY8044	Quantum Information & Technology	20	10	10	7		
PHY8045	Quantum Modelling of Molecules, Solids & Nanostructures	20	10	10	7		

For the purposes of professional accreditation, module PHY8046 is classed as core. Candidates who do not meet the requirements for the accredited award may be considered for a non-accredited exit degree in either:
MPhys in Science (Theoretical Physics) - code 1567U
MPhys in Science (Theoretical Physics) with Placement Year - code 1568U

6. Assessment methods
Details of the assessment pattern for each module are explained in the module outline.

7. Degree classification
Candidates will be assessed for the degree classification on the basis of all the modules taken at Stages 2, 3 and 4 with the weightings of the stages being 1:3:3 for Stage 2, Stage 3 and Stage 4 respectively.