

## Programme Regulations 2021/22

### Programme Titles:

**Degree of Master of Physics with Honours (Physics with Astrophysics) - UCAS Code: F3FM**

**Degree of Master of Physics with Honours in Physics with Astrophysics with Placement Year - Code: 1558U**

### 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 1558U. Rather a F3FM candidate may transfer to 1558U by the end of week 5 of Semester 2 of Stage 2, subject to the agreement of the Degree Programme Director.*

### 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
PHY1033	Introduction to Calculus	20	20	0	4		
PHY1037	Vibrations, Waves & AC Theory & Introduction to Solid State Materials	20	10	10	4		
PHY1038	Introductory Algebra	10	10	0	4		
PHY1030	Laboratory Physics 1	20	10	10	4		
PHY1020	Dynamics	10	0	10	4		
PHY1021	Introductory Astrophysics	10	10	0	4		
PHY1025	Introductory Quantum Mechanics	10	0	10	4		
PHY1024	Introductory Electromagnetism	10	0	10	4		
PHY1029	Multivariate Calculus & Differential Equations	10	0	10	4		

## 2. Stage 2

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		
PHY2024	Principles of Materials & Solid State Physics	10	0	10	5		
PHY2035	Vector Calculus & Differential Equations, Transforms & Waves	20	10	10	5		
PHY2036	Thermodynamics & Statistical Mechanics	20	10	10	5		
PHY2029	Introduction to Observational Astronomy	10	0	10	5		
PHY2038	Optics & Principles of Electromagnetism	20	10	10	5		
PHY2034	Computational Methods & Professional Skills for Theoretical Physics	10	10	0	5		
PHY2033	Fluid Dynamics	10	0	10	5		
PHY2039	Scientific Computation with Python	10	10	0	5		

## 3. Progression

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

## 4. 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
PHY3044	Advanced Quantum Mechanics & Atoms, Molecules, Nuclei & Particles	20	10	10	6		
PHY3022	Relativity	10	10	0	6		
PHY3023	Advanced Materials & Solid State Physics	10	10	0	6		
PHY3039	Group Project	10	10	0	6		
PHY3033	Advanced Astrophysics	10	10	0	6		
PHY3043	Interstellar Medium & High Energy	10	0	10	6		
PHY3040	Stellar Structure & Evolution	10	10	0	6		
PHY3042	Cosmology	10	0	10	6		

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

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
PHY3037	Photonics	10	0	10	6		
PHY3036	Partial Differential Equations & Non-Linear Waves	10	0	10	6		

CEG3707	Geohazards & Deformation of the Earth	10	0	10	6		
PHY3029	Variational Methods & Lagrangian Dynamics	10	0	10	6		
PHY3032	Advanced Electromagnetism	10	0	10	6		
PHY3041	Advanced Fluid Dynamics	10	10	0	6		
PHY3047	Instabilities	10	10	0	6		
PHY3048	Mathematical Biology	10	0	10	6		

## 5. Progression

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.

## 6. Stage 4

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

<i>Code</i>	<i>Descriptive title</i>	<i>Total Credits</i>	<i>Credits Sem 1</i>	<i>Credits Sem 2</i>	<i>Level</i>	<i>Type</i>
PHY8032	Geophysical and Astrophysical Fluids	15	15		7	
PHY8033	Extended Project (Astrophysics)	45		45	7	Core
PHY8038	General Relativity	15		15	7	
PHY8040	Galaxies	15	15		7	
PHY8041	Spectra & Radiative Transfer	15	15		7	

(b) All candidates shall take 15 credits of optional modules normally selected from the following list:

<i>Code</i>	<i>Descriptive title</i>	<i>Total Credits</i>	<i>Credits Sem 1</i>	<i>Credits Sem 2</i>	<i>Level</i>	<i>Type</i>
PHY8029	Quantum Fluids	15	15		7	
PHY8031	Quantum Information and Technology	15	15		7	

With the approval of the Degree Programme Director alternative optional modules to those listed above may be selected.

## 9. Assessment methods

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

## 10. Degree classification

For the purposes of professional accreditation, module PHY8033 is classed as core. Candidates who do not meet the requirements for the accredited award may be considered for a non-accredited exit degree.

BSc (Hons) Candidates will be assessed for the degree classification on the basis of all the modules taken at Stages 2 and 3 with the weightings of the Stages being 1:3 for Stage 2 and Stage 3 respectively.

MPhys (Hons) 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.