

## Programme Regulations: 2023/24

### Programme Titles:

Degree of Bachelor of Science with Honours in Physics with Astrophysics - UCAS Code: F3F5

Degree of Bachelor of Science with Honours in Physics with Astrophysics with Placement Year - Code: 1557U

Degree of Bachelor of Science with Honours in Physics with Astrophysics with International Study Year – Code 1843U

### 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 1557U. Rather a F3F5 candidate may transfer to 1157U 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 (for Physics students)	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 and 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		
PHY2033	Fluid Dynamics	10	0	10	5		
PHY2034	Computational Methods & Professional Skills for Theoretical Physics	10	10	0	5		
PHY2036	Thermodynamics & Statistical Mechanics	20	10	10	5		
PHY2038	Optics & Principles of Electromagnetism	20	10	10	5		
PHY2039	Scientific Computation with Python	10	10	0	5		

### 3. Progression

To progress to Stage 3 of the BSc degree programme, candidates are required to obtain an average over all modules taken at Stage 2 of at least 40.

### 4. Year 3 (Intercalating Year)

#### (a) Careers Placement (1557U)

On completion of Stage 2 and before entering Stage 3, 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 2 assessment must delay the start of their placement until they have done so. Students who fail Stage 2 may not complete a placement year.

<i>Code</i>	<i>Descriptive title</i>	<i>Total Credits</i>	<i>Credits Sem 1</i>	<i>Credits Sem 2</i>	<i>Credits Sem 3</i>	<i>Level</i>	<i>Type</i>	<i>Mode</i>
NCL3000	Career Service Placement Year Module	120	60	60	0	6		

#### (b) International Study Year (1843U)

On completion of Stage 2 and before entering Stage 3, 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 2 assessment must delay the start of their year abroad until they have done so. Students who fail Stage 2 may not complete a year abroad.

<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>	<i>Mode</i>
ISY3000	International Study Year Module	120	60	60	6		

### 5. 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	10	10	0	6		
PHY3023	Advanced Materials and Solid-State Physics	10	10	0	6		

PHY3024	Atoms, Molecules, Nuclei, Particles	10	0	10	6		
PHY3025	Group Project	10	10	0	6		
PHY3033	Advanced Astronomy	10	10	0	6		
PHY3034	Theoretical Project	20	0	20	6	Core	
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		

(b) All candidates shall choose one optional module 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		
PHY3029	Variational Methods & Lagrangian Dynamics	10	0	10	6		
PHY3032	Advanced Electromagnetism	10	0	10	6		
PHY3036	Partial Differential Equations	10	0	10	6		
PHY3037	Photonics	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		

(c) With the approval of the Degree Programme Director, alternative optional modules to those listed above may be selected with a total value of not more than 20 credits. In particular, modules may be selected from the following:

Code	Descriptive Title	Total Credits	Credits Sem 1	Credits Sem 2	Level	Type	Subject
NCL3007	Career Development for Final Year Students	20	10	10	6		

Note: There are limited places on the module and therefore there is no guarantee that students will be accepted

## 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 and 3 with the weightings of the Stages being 1:3 for Stage 2 and Stage 3 respectively.