UNIVERSITY OF YORK

POSTGRADUATE PROGRAMME SPECIFICATION

This document applies to students who commence the programme(s) in:	2016/7
Awarding institution	**Teaching institution**
University of York	University of York
Department(s)	
Centre for Lifelong Learning	
Award(s) and programme title(s)	**Level of qualification**
PG Diploma in Astronomy	Level 7 (Masters)
Award(s) available *only* as interim awards	
PG Certificate in Astronomy	

Admissions criteria

Normally students will be expected to hold a Bachelor's Degree in a related subject area. CLL will also favourably consider any student previously awarded a BA/BSc in any subject, and with evidence of recent HE level study. **Previous maths skills, to A-Level or equivalent standard, are essential.**

CLL reserves the right to ask any student for academic work to support their application.

Any student may be called to interview. It is anticipated that students will be largely from a science background. The programme will be targeted at students who will already have the required skills to study at M level.

Students will not be accepted to the programme unless they can demonstrate the required skills, which could include a maths test for non-traditional applicants.

Students must have an IELTS score of 7.0 where appropriate.

Length and status of the programme(s) and mode(s) of study

Programme	**Length (years) and status (full-time/part-time)**	**Start dates/months** (if applicable – for programmes that have multiple intakes or start dates that differ from the usual academic year)	**Mode**		
			Face-to-face, campus-based	**Distance learning**	**Other**
PG Diploma in Astronomy	2 years part-time (usual maximum of 3 years registration)	Annual October start date * Separate January start date (p.5)	1 residential weekend, per academic year.	Yes	

Language of study	English

Programme accreditation by Professional, Statutory or Regulatory Bodies (if applicable)

N/A

Educational aims of the programme(s)

For the Certificate:

- Students will have a comprehensive knowledge of the development of astronomy, astronomy in the visible region of the electromagnetic spectrum, the solar system and stellar physics.
- Students will learn that physics is a quantitative subject and appreciate the use and power of mathematics for modelling the physical world and solving problems.
- Students will have developed skills in research and planning and their ability to assess critically the link between theoretical results and experimental observation.
- Students will develop the ability to solve advanced problems in physics using appropriate mathematical tools.
- Students will be able to identify the relevant physical principles, to translate problems into mathematical statements and apply their knowledge to obtain order-of-magnitude or more precise solutions as appropriate.
- Students will develop the ability to plan and execute under supervision an experiment or investigation, analyse critically the results and draw valid conclusions. Students should be able to evaluate the level of uncertainty in their results, understand the significance of error analysis and be able to compare these results with expected outcomes, theoretical predictions or with published data.

Additionally for the Diploma:

- In addition to the aims noted above, students completing the diploma will have a deeper understand of the practical aspect of Astronomy outside of the visible region of the electromagnetic spectrum and cosmology.
- Students will have a more complete working knowledge of a variety of experimental, mathematical and computational techniques applicable to current research within physics.

Intended learning outcomes for the programme – and how the programme enables students to achieve and demonstrate the intended learning outcomes

This programme provides opportunities for students to develop and demonstrate knowledge and understanding qualities, skills and other attributes in the following areas:	*The following teaching, learning and assessment methods enable students to achieve and to demonstrate the programme learning outcomes:*
A: Knowledge and understanding	
1. Students will learn that physics is a quantitative subject and appreciate the use and power of mathematics for modelling the physical world and solving problems. 2. The students' skills in research and planning and their ability to assess critically the link between	Learning/teaching methods and strategies (relating to numbered outcomes): • Delivery of online materials (1,3,4,5,6) • Online workshops/blogs (1,3,4,5,6) • Face-to-face residential workshops (1,2,3,4,5,6) • Reading of primary/secondary texts (1,2,3,4,5,6)

theoretical results and experimental observation will be developed. 3. Students will develop an understanding of most fundamental laws and principles of astrophysics, along with their application to a variety of areas in astrophysics, some of which are at (or are informed by) the forefront of the discipline 4. Students will develop the ability to solve advanced problems in physics using appropriate mathematical tools. Students will be able to identify the relevant physical principles, to translate problems into mathematical statements and apply their knowledge to obtain order-of-magnitude or more precise solutions as appropriate. 5. Students will develop the ability to plan and execute under supervision an experiment or investigation, analyse critically the results and draw valid conclusions. Students should be able to evaluate the level of uncertainty in their results, understand the significance of error analysis and be able to compare these results with expected outcomes, theoretical predictions or with published data. They should be able to evaluate the significance of their results in this context. 6. Students will develop a working knowledge of a variety of experimental, mathematical and computational techniques applicable to current research within physics.	Types/methods of assessment (relating to numbered outcomes): • Formative weekly problems (1,2,3,4,6) • Short critical essays (1,2,3,4,6) • Research project (1,2,3,4,5,6) • Poster (2,6) • Maths-based problems (1,2,3,4,6)
B: (i) Skills – discipline related	
At the end of the module, students will be able to: 1. Formulate and tackle problems in physics 2. Identify the appropriate physical principles to solve problems 3. Use special and limiting cases and order-of-magnitude estimates to guide their thinking about a	Learning/teaching methods and strategies (relating to numbered outcomes): • Delivery of online materials (1,2,3,4) • Online workshops/blogs (1,2,3,4) • Face-to-face residential workshops (1,2,3,4) • Reading of primary/secondary texts (1,2,3,4)

<table>
<tr><td>problem and how to present the solution, making their assumptions and approximations explicit
4. Use mathematics to describe the physical world</td><td>Types/methods of assessment (relating to numbered outcomes)

• Formative weekly problems (1,2,3,4)
• Short critical essays (4)
• Research project (1,2,3,4)
• Maths-based problems (1,2,3,4)</td></tr>
<tr><td colspan="2">B: (ii) Skills – transferable</td></tr>
<tr><td rowspan="2">At the end of the module, students will be able to:
1. Communicate complex scientific ideas, the conclusions of an experiment, investigation or project concisely, accurately and informatively
2. Manage their own learning and to make use of appropriate texts, research articles and other primary sources.
3. Demonstrate problem-solving skills
4. Display developed investigative skills
5. Demonstrate ICT skills
6. Present themselves with enhanced personal skills</td><td>Learning/teaching methods and strategies (relating to numbered outcomes):

• Delivery of online materials (1,2,3,4)
• Online workshops/blogs (1,2,3,4,5,6)
• Face-to-face residential workshops (1,2,3,4,5,6)
• Reading of primary/secondary texts (1,2,3,4)</td></tr>
<tr><td>Types/methods of assessment (relating to numbered outcomes)

• Formative weekly problems (2,3,4)
• Short critical essays (1,2,3,4)
• Research project (1,2,3,4,5)
• Poster (1,2,4,5)
• Maths-based problems (2,3,4)</td></tr>
<tr><td colspan="2">C: Experience and other attributes</td></tr>
<tr><td rowspan="2">.At the end of the module, students will:
1. Understand various methods used in modern Astronomy
2. Understand the fundamental physics implicit within Astronomy and Astrophysics</td><td>Learning/teaching methods and strategies (relating to numbered outcomes):
• Delivery of online materials (1,2)
• Online workshops/blogs (1,2)
• Face-to-face residential workshops (1,2)
• Reading of primary/secondary texts (1,2)</td></tr>
<tr><td>Types/methods of assessment (relating to numbered outcomes)
• Formative weekly problems (1,2)
• Short critical essays (1,2)
• Research project (1,2)
• Poster (1,2)
• Maths-based problems (1,2)</td></tr>
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Relevant Quality Assurance Agency benchmark statement(s) and other relevant external reference points (e.g. National Occupational Standards, or the requirements of Professional, Statutory or Regulatory Bodies)

The programme will be aligned to the postgraduate QAA benchmark statements for Physics, Astronomy, and Astrophysics issued in 2008: http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Physics-astronomy-and-astrophysics.pdf.

University award regulations

To be eligible for an award of the University of York a student must undertake an approved programme of study, obtain a specified number of credits (at a specified level(s)), and meet any other requirements of the award as specified in the award requirements and programme regulations, and other University regulations (e.g. payment of fees). Credit will be awarded upon passing a module's assessment(s) but some credit may be awarded where failure has been compensated by achievement in other modules. The University's award and assessment regulations specify the University's marking scheme, and rules governing progression (including rules for compensation), reassessment and award requirements. The award and assessment regulations apply to all programmes: any exceptions that relate to this programme are approved by University Teaching Committee and are recorded at the end of this document.

Departmental policies on assessment and feedback

Detailed information on assessment (including grade descriptors, marking procedures, word counts etc.) is available in the written statement of assessment which applies to this programme and the relevant module descriptions. These are available in the student handbook and on the Department's website which is available on the VLE: CLL's Induction Site.

Information on formative and summative feedback to students on their work is available in the written statement on feedback to students which applies to this programmes and the relevant module descriptions. These are available in the student handbook and on the Department's website which is available on the VLE: CLL's Induction Site.

Diagrammatic representation of the programme structure, showing the distribution and credit value of core and option modules

Postgraduate Diploma (if applicable)

	Autumn term	Spring term	Summer term
Year One	Introduction to Astronomy	Stellar Physics	The Solar System
Year Two	Infrared and Radio Astronomy	High Energy Astronomy	The Foundations of Cosmology

** For January start dates, the same schedule will be followed, only all modules will be delivered one term later than the model above:*

	Spring term	*Summer term*	*Autumn term*
Year One	*Introduction to Astronomy*	*Stellar Physics*	*The Solar System*
Year Two	*Infrared and Radio Astronomy*	*High Energy Astronomy*	*The Foundations of Cosmology*

Postgraduate Certificate

Autumn term	Spring term	Summer term
Introduction to Astronomy	Stellar Physics	The Solar System

** For January start dates, the same schedule will be followed, only all modules will be delivered one term later than the model above:*

Spring term	*Summer term*	*Autumn term*
Introduction to Astronomy	*Stellar Physics*	*The Solar System*

Diagrammatic representation of the timing of module assessments and reassessments, and the timing of departmental examination/progression boards

	Autumn term	**Spring term**	**Summer term**	**Summer vacation**	**Date of final award board**
	Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.	Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.	Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.	N/A	Late August annually

All reassessments will take place five weeks after completion of marking on initial submissions

** For January start dates, the same schedule will be followed, only all modules will be delivered one term later than the model above:*

	Spring term	***Summer term***	***Summer Vacation***	***Autumn term***	***Date of final award board***
	Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.	*Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.*	*N/A*	*Submission to be Wednesday (Week 11) following conclusion of Week 10 activities.*	*Late Spring term annually*

Overview of modules

Core module table

Module title	Module code	Credit level[1]	Credit value[2]	Prerequisites	Assessment rules[3]	Timing (term and week) and format of main assessment[4]	Independent Study Module?[5]
Introduction to Astronomy		7	20			**Autumn – week 11** • Essay - 2,000 words, 75% • Maths-based open book problem questions – 1 week, 25%	**N**
Stellar Physics		7	20			**Spring – week 11** • Maths-based open book problem questions – 1 week, 25% • Research project and accompanying written report - 2,000 words, 75%	**N**

[1] The **credit level** is an indication of the module's relative intellectual demand, complexity and depth of learning and of learner autonomy. Most modules in postgraduate programmes will be at Level 7/Masters. Some modules are permitted to be at Level 6/Honours but must be marked on a pass/fail basis. See University Teaching Committee guidance for the limits on Level 6/Honours credit.
[2] The **credit value** gives the notional workload for the module, where 1 credit corresponds to a notional workload of 10 hours (including contact hours, private study and assessment)
[3] **Special assessment rules** (requiring University Teaching Committee approval)
P/F – the module is marked on a pass/fail basis (NB pass/fail modules cannot be compensated)
NC – the module cannot be compensated
NR – there is no reassessment opportunity for this module. It must be passed at the first attempt
[4] AuT – Autumn Term, SpT – Spring Term, SuT – Summer Term, SuVac – Summer vacation
[5] **Independent Study Modules** (ISMs) are assessed by a dissertation or substantial project report. They cannot be compensated (NC) and are subject to reassessment rules which differ from 'taught modules'. Masters programmes should include an ISM(s) of between 60 and 100 credits. This is usually one module but may be more.

The Solar System		7	20			**Summer – week 11** • Conference-style poster - 50% • Maths-based open book problem questions – 1 week, 50%	**N**
Infrared and Radio Astronomy		7	20			**Autumn – week 11** • Lab book, 25% • Research project and accompanying written report - 2,000 words, 75%	**N**
High Energy Astronomy		7	20			**Spring – week 11** • Poster - 50% • Maths-based open book problem questions – 1 week, 50%	**N**
The Foundations of Cosmology		7	20			**Summer – week 11** • Essay - 2,000 words, 50% • Maths-based open book problem questions – 1 week, 50%	**N**

** For January starters, all Timings are set as one term later.*

Option modules

Module title	Module code	Credit level	Credit value	Prerequisites	Assessment rules	Timing and format of main assessment	Independent Study Module?

Transfers out of or into the programme	
Exceptions to University Award Regulations approved by University Teaching Committee	
Exception	**Date approved**

Quality and Standards

The University has a framework in place to ensure that the standards of its programmes are maintained, and the quality of the learning experience is enhanced.

Quality assurance and enhancement processes include:

- The academic oversight of programmes within departments by a Board of Studies, which includes student representation
- The oversight of programmes by external examiners, who ensure that standards at the University of York are comparable with those elsewhere in the sector
- Annual monitoring and periodic review of programmes
- The acquisition of feedback from students by departments.

More information can be obtained from the Academic Support Office:
http://www.york.ac.uk/about/departments/support-and-admin/academic-support/

Date on which this programme information was updated:	9/8/2016
Departmental web page:	www.york.ac.uk/lifelonglearning

Please note

The information above provides a concise summary of the main features of the programme and learning outcomes that a typical students might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the leaning opportunities that are provided.

Detailed information on learning outcomes, content, delivery and assessment of modules can be found in module descriptions.

The University reserves the right to modify this overview in unforeseen circumstances, or where processes of academic development, based on feedback from staff, students, external examiners or professional bodies, requires a change to be made. Students will be notified of any substantive changes at the first available opportunity.