Programme Specification Document

Approved, 2022.02

Overview

Programme Code	20151
Programme Title	Astrophysics
Awarding Institution	Liverpool John Moores University
Programme Type	Integrated Masters
Programme Leader	Benjamin Davies
Link Tutor(s)	Matthew Darnley

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Master of Physics - MPY	See Learning Outcomes Below

Alternate Award Names	

External Benchmarks

Subject Benchmark Statement	UG-Physics, Astronomy and Astrophysics (2019)

Accreditation

Programme Accredited by

PSRB Name	Type of Accreditation	Valid From Date	Valid To Date	Additional Notes

Institute of Physics (IOP)	Accredited by the Institute of Physics (IOP) for the purpose of fully meeting the educational requirement for Chartered Physicist.		

Aims and Outcomes

Educational Aims of the Programme

The aims of the programme are: to provide an understanding of astrophysics at a depth appropriate for those aiming for a professional career in the subject. to use our involvement in first-class international scientific research, both to enrich our teaching and to inform course design. to encourage each student's learning, understanding and application of the knowledge taught. to develop students' mathematical and analytical skills to develop students' competence in scientific communication, both in oral and written form to monitor and review our teaching regularly to ensure the maintenance of quality.

Learning Outcomes

Code	Description
PLO1	knowledge and understanding of the syllabus material
PLO2	be able to carry out accurate experimental measurements
PLO3	be able to use telescopes and other devices to make astronomical observations
PLO4	have experience of working as an individual or in small groups
PLO5	have the ability to organise time and meet deadlines
PLO6	have additional skills resulting from the experience of more extensive project work
PLO7	the ability to think logically, analyse problems and phenomena and to devise explanations or solutions
PLO8	an appreciation of the role of mathematical modelling of physical phenomena to produce predictions which can be tested against experimental observations
PLO9	an awareness of the importance of accurate experimentation and observations across the whole electromagnetic spectrum in the understanding of natural and astrophysical phenomena
PLO10	the practical and technical skills required for physics experimentation and astronomical observation and an appreciation of the importance of a systematic approach to experimental measurement.
PLO11	knowledge and understanding across a wider range of astrophysics than that covered in the 3 year B. Sc., with some topics treated in more depth.
PLO12	an appreciation of selected areas of current astrophysics research at the frontiers of the subject.
PLO13	develop skills in computing, numeracy, written and oral communication

Code	Description
PLO14	have mathematical modelling and problem solving skills

Programme Structure

Programme Structure Description

Module specifications may be accessed at https://proformas.ljmu.ac.uk/Default.aspx

Teaching, Learning and Assessment

The programme material is delivered in modules, which are defined in the Department's Student Handbook provided for all students in terms of aims, learning objectives and assessment. In the majority of modules, the primary medium of teaching is the lecture, which introduces the student to the subject and maps out the module content. Small group tutorials, usually based around a structured set of problems set by the lecturer, reinforce the lecture material and provide a setting for two way discussions of ideas of physics. Emphasis is also placed on the importance of students' private study, with recommended private study times listed in the Handbook. Practical work is varied and progressive throughout the four years of the programme, concluding with a 30 Credit project in Year 4. Experience in computing and IT skills is based around an introductory module in Year 1, usage in the practical laboratories in all years and a 15 credit module involving a project using Java programming language in Year 3. Communication skills are developed progressively throughout the programme. Student presentations of a scientific topic to the tutorial group in Year 1 and to two academic staff in Year 2, lead on to a 20 minute presentation, including 5 minutes for questions, of the Year 3 project to students and academic staff. In Year 4, the Research Skills module is group activity investigating and reporting on a Physics-based problem with an individual interview as part of the assessment process, while the 30 Credit project which follows involves a 30 minute presentation, including 10 minutes for questions to students and academic staff. Assessment is by examination and/or continual assessment of written work. The various assessment procedures are intended to guide the student towards a balanced study of the subject and to measure as fairly as possible their ability. Examinations consist of questions designed to test knowledge and understanding as well as problem solving, analytical skills and insight. The programme material is delivered in modules, which are defined in the Department's Student Handbook provided for all students in terms of aims, learning objectives and assessment. In the majority of modules, the primary medium of teaching is the lecture, which introduces the student to the subject and maps out the module content. Small group tutorials, usually based around a structured set of problems set by the lecturer, reinforce the lecture material and provide a setting for two way discussions of ideas of physics. Emphasis is also placed on the importance of students' private study, with recommended private study times listed in the Handbook. Practical work is varied and progressive throughout the four years of the programme, concluding with a 30 Credit project in Year 4. Experience in computing and IT skills is based around an introductory module in Year 1, usage in the practical laboratories in all years and a 15 credit module involving a project using Java programming language in Year 3. Communication skills are developed progressively throughout the programme. Student presentations of a scientific topic to the tutorial group in Year 1 and to two academic staff in Year 2, lead on to a 20 minute presentation, including 5 minutes for questions, of the Year 3 project to students and academic staff. In Year 4, the Research Skills module is group activity investigating and reporting on a Physics-based problem with an individual interview as part of the assessment process, while the 30 Credit project which follows involves a 30 minute presentation, including 10 minutes for questions to students and academic staff. Assessment is by examination and/or continual assessment of written work. The various assessment procedures are intended to guide the student towards a balanced study of the subject and to measure as fairly as possible their ability. Examinations consist of questions designed to test knowledge and understanding as well as problem

Entry Requirements

Type	Description
A levels	The typical offer is 300 UCAS tariff points.. This should consist of Grades AB or BA at A level in Physics and Mathematics and Grade C in a third subject at A level. Other contributions to the total tariff score, such as levels, will also be considered. All other equivalent qualifications are also given consideration for entry.
Alternative qualifications considered	The normal literacy and numeracy requirements of the Faculty of Science are Grade C or above in GSCE in both English and Mathematics or their equivalents.