

MODULE DESCRIPTOR

MODULE TITLE	IT for Astronomy				
MODULE CODE	AA1055(L4)	JACS CODE	F500	CREDIT VALUE	20 credits
DATE OF APPROVAL	April 2017				VERSION NUMBER 1
SCHOOL	Physical Sciences and Computing		PARTNER INSTITUTION	N/A	

RELATIONSHIP WITH OTHER MODULES

Co-requisites	NONE	Pre-requisites	AA1051	Excluded Combinations	None
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MODULE AIMS

The module aims to:

- Provide an introduction to the use of computers in astronomy for people who already have some knowledge of astronomy
- Introduce the use of online sources of astronomical information.
- Provide an introduction to the IT skills required for scientific communication.
- Build the confidence to develop new skills and techniques via online tools and to use computers independently.

MODULE CONTENT

This module focuses on the skills and information technologies surrounding the discovery, manipulation, and communication of astronomical data and information. It has four strands:

- A. **Digital Literacy** - PC specifications and peripheral components. Operating Systems. Applications software. The components of the internet.
- B. **Digital Authoring** – The use of standard Office software (word processors, spreadsheets, and presentations). Including best practice in writing scientific reports/texts, analysing simple data sets, and displaying data.
- C. **Astronomy Online** – The types of online information sources available, how to use and evaluate them. Including static information sources and online tools. How information is published online.
- D. **Astronomy on the Desktop** - An introduction to major astronomical software packages and their file formats (e.g. FITS files). This includes but is not limited to sky viewers, basic data reduction, photometry, plotting, and educational software.

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:

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| 1. | Use a computer, operating system, and office applications effectively |
| 2. | Use appropriate word processing, spreadsheet and presentation packages. |
| 3. | Explore the internet for astronomical data sources, information and appropriate applications |
| 4. | Prepare scientific documents that include: simple data analysis, equations, tables, diagrams, and images |
| 5. | Use basic astronomical applications to analyse simple data sets. |

ASSESSMENT METHODS

The method of assessment for this module has been designed to test all the learning outcomes. Students must demonstrate successful achievement of these learning outcomes to pass the module.

Number of Assessments	Form of Assessment	% weighting	Size of Assessment/Duration/ Wordcount	Category of assessment	Learning Outcomes being assessed
1	Scientific document preparation	20%	10 pages	Coursework	1,2,4
1	Preparation of a work using online resources	40%	1600 words	Coursework	1,2,3
1	Presentation of scientific results	40%	7-15 slides equivalent to 15 minute presentation + preparatory data analysis	Coursework	1,4,5

MODULE PASS REQUIREMENTS

To pass this module you must achieve a mark of 40% or above, aggregated across all the assessments.

APPENDIX

MODULE CODE: AA1055 (L4)

MODULE TITLE: IT for Astronomy

LOCATION OF STUDY: UCLAN CAMPUS

MODULE TUTOR(S)	Jason Kirk
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MODULE DELIVERY	Semester Long	Semester 1		Semester 2		Semester 3	
	Year long	Semester 1 & 2		✓	Semester 2 & 3		
	Other (please indicate pattern of delivery)	DISTANCE LEARNING					

MODULE LEARNING PLAN

All modules should include details of the average learning time based upon 200 hours per 20 credits.

LEARNING, TEACHING AND ASSESSMENT STRATEGY	
<p>Distance learning students will learn via self-study, supported by detailed distance learning material supplied by the Course Team according to a Course Schedule. Tutorial support via online discussion forums, online classrooms email and telephone as required.</p> <p>The learning materials include Course Notes with worked examples, practice exercises based on topics familiar from the pre-requisite module and assessed coursework. Additional material and suggested further reading will be available via Blackboard, including links to online training packages. Students will be encouraged to make frequent contributions to open discussions via electronic forums.</p> <p>The first assessment develops students' IT skills to produce well-presented and structured scientific documents including practice in plotting astronomical graphs and summarising information. These are essential skills.</p> <p>The second assessment gives practice in locating and using web resources and writing up the results in a short report.</p> <p>The third assessment is designed to give students confidence in analysing astronomical data and writing it up in a scientific report.</p>	
SCHEDULED LEARNING AND TEACHING ACTIVITY	<i>No. of hours</i>
Tutorial	
TOTAL SCHEDULED LEARNING HOURS	8
GUIDED INDEPENDENT STUDY	
<p>First reading of posted materials (equiv. to lectures) <i>Working through details</i> <i>Background reading</i> <i>Working on coursework assignments</i> <i>Reflection on feedback</i></p>	
TOTAL GUIDED INDEPENDENT STUDY HOURS	192
TOTAL STUDENT LEARNING HOURS (eg 200 hours per 20 credits)	200

BIBLIOGRAPHY AND LEARNING SUPPORT MATERIAL

On-line Booklist: <http://readinglists.central-lancashire.ac.uk/search.html?q=AA1055>