Module Specifications..

Current Academic Year 2021 - 2022

Please note that this information is subject to change.

Module Title	Life, the Universe and Everything		
Module Code	PS114		
School	School of Physical Sciences		
Module Co-ordinator	Semester 1: Paul Van Kampen Semester 2: Eamonn Cunningham Autumn: Eamonn Cunningham		
Module Teacher	No Teacher Assigned		
NFQ level	8	**Credit Rating**	5
Pre-requisite	None		
Co-requisite	None		
Compatibles	None		
Incompatibles	None		

Description

Life, the Universe and Everything is an introductory module to the astronomy and biomedical sciences streams in our suite of physics degrees. This module will help inform students about the different degree streams available in second and subsequent years.

Learning Outcomes

1. Explain the motion of the Sun, Moon & planets in the sky
2. Calculate the motion of the plantets in the solar system using Kepler's Laws
3. Describe the composition & nature of the sun and its power source.
4. Quantify the different types of stars and their life cycle.
5. Describe the structure and functions of human body systems
6. Explain the role of physics in the human body, including respiratory and cardiovascular systems.
7. Calculate fluid velocities and pressures within different parts of the body.
8. Discuss energy and energy transfer in the body, including work, temperature and heat, and metabolism.

Workload	Full-time hours per semester	
Type	*Hours*	*Description*
Lecture	24	Lectures on astronomy & biomedical sciences
Tutorial	12	Tutorials and 2 in class tests
Independent Study	89	Independent worl
		Total Workload: 125

All module information is indicative and subject to change. For further information,students are advised to refer to the University's Marks and Standards and Programme Specific Regulations at: http://www.dcu.ie/registry/examinations/index.shtml

Indicative Content and Learning Activities

The Sky
Movement of the Sun, Moon & planets. Ptolemaic & Copernican models. Earth's orbit, time & eclipses.

The Solar system
Solar system; Sun, terrestrial planets & gas giants, minor bodies & extra solar planets. Kepler's Laws, gravity, and motion of the planets. Solar constant & habitable zone.

Sun
Spectrum, composition and structure of the Sun. Nuclear fusion in the Sun

Life cycle of stars
Types of stars and their luminosity. HR diagram, life cycles of stars, supernovae

Physiology of the body
Structure and function of different parts of the body. Cardiovascular and respiratory systems.

Fluids and pressures
Blood pressure, the heart, blood flow. Pressure in various organs. Bone density.

Energy regulation
Work. Regulation of body temperature. Metabolism.

Assessment Breakdown			
Continuous Assessment	20%	Examination Weight	80%

Course Work Breakdown			
Type	**Description**	**% of total**	**Assessment Date**
In Class Test	Planetary motion, solar irradiation and fusion.	10%	Week 7

In Class Test	Physics of the human body	10%	Week 10

Reassessment Requirement Type
Resit arrangements are explained by the following categories; 1 = A resit is available for all components of the module 2 = No resit is available for 100% continuous assessment module 3 = No resit is available for the continuous assessment component
This module is category 3

Indicative Reading List

- **Hugh D. Young,Roger A. Freedman:** 0, University Physics with Modern Physics in SI Units, 1-292-31473-7
- **Ian Morison:** 2008, Introduction to Astronomy & Cosmology, Wiley,
- **Seeley & Tate, McGraw Hill, UK:** 2011, Essentials of Anatomy and Physiology,

Other Resources

45404, Lecture notes on LOOP, E Cunningham, 0, PS114 Lecture notes,

Array

Programme or List of Programmes

AFU	Age Friendly University Programme
BSSA	Study Abroad (DCU Business School)
BSSAO	Study Abroad (DCU Business School)
ECSA	Study Abroad (Engineering & Computing)
ECSAO	Study Abroad (Engineering & Computing)
HMSA	Study Abroad (Humanities & Soc Science)
HMSAO	Study Abroad (Humanities & Soc Science)
IESA	Study Abroad (Institute of Education)
PGE	Physics General Entry
SE	BSc Science Education
SHSA	Study Abroad (Science & Health)
SHSAO	Study Abroad (Science & Health)

Timetable this semester: Timetable for PS114

Archives:

- See the module specification for PS114 in 2003 - 2004
- See the module specification for PS114 in 2004 - 2005

- See the module specification for PS114 in 2005 - 2006
- See the module specification for PS114 in 2006 - 2007
- See the module specification for PS114 in 2007 - 2008
- See the module specification for PS114 in 2008 - 2009
- See the module specification for PS114 in 2009 - 2010
- See the module specification for PS114 in 2010 - 2011
- See the module specification for PS114 in 2011 - 2012
- See the module specification for PS114 in 2012 - 2013
- See the module specification for PS114 in 2013 - 2014
- See the module specification for PS114 in 2014 - 2015
- See the module specification for PS114 in 2015 - 2016
- See the module specification for PS114 in 2016 - 2017
- See the module specification for PS114 in 2017 - 2018
- See the module specification for PS114 in 2018 - 2019
- See the module specification for PS114 in 2019 - 2020
- See the module specification for PS114 in 2020 - 2021
- See the module specification for the current year