AS5003 - Contemporary Astrophysics

Credits: 15.0  Semester: 1  
Number of Lectures: 27  Lecturer: Dr Hongsheng Zhao, Dr Bert Vandenbroucke and Dr Duncan Forgan  
Academic Year: 2018-19

Overview
Astrophysics is a constantly changing field in which new observations and theories are continually revising our knowledge and outlook. This course provides a view of research level astrophysics and the opportunity to apply the accumulated knowledge of the astrophysics degree to new problems.

Aims & Objectives
To introduce the students to research level astrophysics including several independent topics of current research. To use the knowledge base, applied to novel problems. To familiarise the students with the process of modelling physics in astrophysical contexts.

Learning Outcomes
The student will be able to use his/her accumulated knowledge and apply it to topics of current astrophysical research. Specifically, the student will be able to comprehend the primary concepts in research level astrophysics topics; formulate an approach to novel and unsolved problems; understand the different techniques and approaches used in various topics; make critical judgement of the merit of research papers in astrophysics.

Synopsis
This is a continually evolving module that introduces the student to three main topics of astrophysical research. Topics covered are selected by the teaching staff, and may include dynamics, gravitational lensing, general relativity, cosmological simulations, planet formation and young stellar objects, stellar activity, stellar and planetary atmospheres, interacting binaries, astrophysical discs, active galactic nuclei.

Pre-requisites
For MPhys students: AS4010, AS4012, PH3061, PH3081. MSc Astrophysics students must have substantial astronomy knowledge and skills.

Anti-requisites
None

Assessment
2 Hour Examination = 100%

Recommended Books
Please view University online record:  
http://resourcelists.st-andrews.ac.uk/modules/as5003.html

General Information
Please also read the general information in the School's honours handbook.