

COURSE DETAIL

HIGH ENERGY ASTROPHYSICS

Country

United Kingdom - Scotland

Host Institution

University of Edinburgh

Program(s)

University of Edinburgh

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Physics

UCEAP Course Number

109

UCEAP Course Suffix**UCEAP Official Title**

HIGH ENERGY ASTROPHYSICS

UCEAP Transcript Title

ENERGY ASTROPHYSICS

UCEAP Quarter Units

4.00

UCEAP Semester Units

2.70

Course Description

This course examines the many physical processes which are important in the structure and emission of light from extreme astrophysical sources. Starting from Maxwell's equations, the classical theory of radiation from an accelerated charge is developed, and generalized to the relativistic case. Topics include synchrotron radiation from relativistic electrons gyrating in a magnetic field; the acceleration of particles to relativistic energies; Compton and inverse Compton scattering; accretion of material onto compact objects; radio galaxies and quasars, and their jets; bremsstrahlung emission from hot gas; and cooling flows and the role of black holes in galaxy formation.

Language(s) of Instruction

English

Host Institution Course Number

PHYS11013

Host Institution Course Title

HIGH ENERGY ASTROPHYSICS

Host Institution Campus

Edinburgh

Host Institution Faculty

Host Institution Degree

Host Institution Department

Physics and Astronomy

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