

COURSE DETAIL

ELECTROMAGNETISM AND OPTICS

Country

New Zealand

Host Institution

University of Otago

Program(s)

University of Otago

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Physics

UCEAP Course Number

132

UCEAP Course Suffix**UCEAP Official Title**

ELECTROMAGNETISM AND OPTICS

UCEAP Transcript Title

ELECTROMAG & OPTICS

UCEAP Quarter Units

7.00

UCEAP Semester Units

4.70

Course Description

This course develops the classical theory of electromagnetism in terms of Maxwell's equations, both in vacuum and in media. A major emphasis is placed on the use of vector calculus and its related integral theorems to solve for electric and magnetic fields. The formal similarity of electrostatic and magnetostatic problems is shown, and principles of symmetry and superposition are used to facilitate solution. Electromagnetic induction and the energy of electromagnetic fields are introduced. Fundamental concepts in optics are developed in terms of electromagnetism, including light propagation, interference, reflection, refraction, transmission at interfaces, and applications in diffraction.

Language(s) of Instruction

English

Host Institution Course Number

PHSI232

Host Institution Course Title

ELECTROMAGNETISM AND OPTICS

Host Institution Course Details**Host Institution Campus**

Dunedin

Host Institution Faculty**Host Institution Degree****Host Institution Department**

Physics

Course Last Reviewed

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