

College Physics 2

Module Information

2022.01, Approved

Summary Information

Module Code	4306CIT
Formal Module Title	College Physics 2
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Changshu Institute of Technology

Learning Methods

Learning Method Type	Hours
Lecture	64
Practical	16

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

Aims and Outcomes

Aims	This module is to provide the foundation physics of Particles, Fields and Electricity to analyse simple physical systems.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Understand the components of the atom, master the charge and quality, learn how to determine the size of the nucleus and its behaviour.
MLO2	2	Explain the principles and behaviour of the Coulomb force and the electric field, explaining the resistance, capacitance and inductance.
MLO3	3	Give Mathematical Description of Simple Field Method and Its Application
MLO4	4	Know the principles of the electro-magnetic Induction.

Module Content

Outline Syllabus	(i) Electromagnetic particles Introduction, charge, Coulomb 's law(ii) Electric field, electric field strength and calculation, field superposition principle,electric field intensity flux(iii) Gauss 's theorem, using Gauss' s theorem to find a special electric fielddistribution(iv) Electromagnetic field loop theorem, potential energy, potential and potentialcalculation(v) Magnetic field, Gauss's law and Ampere's Law in magnetic field,Boit-Savart law and Its application(vi) Motion of charged particles in magnetic field, magnetic force on current carrying,magnetic torque on a current loop(vii) Faraday's law of induction, motional electromotive force and inducedelectromotive force, self-induction and mutual induction(viii) Young's interference experiment, interference from thin films, Michelsoninterferometer(ix) Huygens principle, single-slit diffraction and diffraction by a circular aperture,diffraction gratings.
Module Overview	
Additional Information	This module provides a basis physics of Particles, Fields and Electricity to analyse simple physical systems.For each topic area of the syllabus, relevant typical experiments will be provided.Reports are 2500 maximum word count.Examinations are 2 hour duration.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Examination	40	2	MLO1, MLO2, MLO3
Report	Report	60	0	MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Clifford Mayhew	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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