

FP0A1-30 Foundations of Physics

26/27

Department

Warwick Global Academy

Level

Foundation

Module leader

Felix Mayeya

Credit value

30

Module duration

25 weeks

Assessment

50% coursework, 50% exam

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module introduces the key principles, models, and techniques of physics needed for analysing scientific and engineering problems. It provides a balance of theoretical understanding and practical application, preparing students for undergraduate study in physics and related mathematics-based fields. Students will learn to build, apply, and review physical models to explain and solve real-world problems. By the end of the module, students will be able to apply physical principles effectively to a range of scientific and engineering contexts.

[Module web page](#)

Module aims

The aim of this module is to support the development of theoretical and practical abilities required in the physical sciences.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

1. Physical Quantities and Measurements
2. Scalar and vector quantities
3. Linear motion
4. Projectile motion
5. Newton's laws of motion
6. Work, energy and power
7. Momentum and its applications
8. Moments
9. Circular motion
10. Materials
11. Electricity
12. Simple harmonic motion
13. Waves: wave properties
14. Waves: Diffraction and interference
15. Waves: Stationary waves
16. Thermal energy transfer
17. Thermodynamics
18. Electric field
19. Capacitors
20. Magnetic fields
21. Electromagnetic induction
22. Transformers
23. Quantum phenomena
24. Wave-particle duality
25. Atomic, Nuclear and Particle Physics

Learning outcomes

By the end of the module, students should be able to:

- 1. Construct and present arguments through appropriate use of logical deduction, physical principles and experimentation.
- 2. Use physical principles in the analysis and solution of real world problems in the sciences and engineering.
- 3. Exhibit a range of key competences including time management, team work, communication skills and presentation skills, research skills (including information retrieval, interpretation and citation) and critical analysis.

Indicative reading list

[Reading lists can be found in Talis](#)

International

All students are international, representing a wide range of cultural, linguistic, and educational backgrounds. They bring diverse experiences and perspectives, enriching discussion and

supporting the development of intercultural awareness. Examples for analysis and evaluation are drawn from a variety of countries, ensuring that teaching and learning are embedded in an international context.

Subject specific skills

Students will develop the fundamental principles of physics in the analysis and solution of real-world problems in the sciences and engineering.

Transferable skills

Students will exhibit a range of key competences including time management, teamwork, communication skills and presentation skills, research skills (including information retrieval, interpretation and citation) and critical analysis.

Study

Study time

Type	Required
Seminars	25 sessions of 2 hours (17%)
Supervised practical classes	25 sessions of 2 hours (17%)
Private study	140 hours (47%)
Assessment	60 hours (20%)
Total	300 hours

Private study description

Additional reading to consolidate the understanding of topics covered during lectures and seminars.

Practice past examination questions.

Review articles for case study.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group C

	Weighting	Study time	Eligible for self-certification
Assessment component			
Physics Laboratory Investigation Lab report on practical investigation	20%	12 hours	Yes (extension)

Reassessment component is the same

Assessment component

Theory Test In-person, in-class test.	30%	12 hours	No
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Reassessment component is the same

Assessment component

Foundations of Physics Exam In-person examination	50%	36 hours	No
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- Answerbook Gold (24 page)

Reassessment component is the same

Feedback on assessment

Written feedback provided on Tabula and individual discussions.

[Past exam papers for FP0A1](#)

Availability

There is currently no information about the courses for which this module is core or optional.