

STEM Foundation Year Physics 24/25

Modules & Assessment

Trimesters 1 & 2

Foundation Physics A [*mechanics.matter.waves*]

Material will be selected from Sections of the main course book: A-Level Physics for AQA: Year 1 & 2 Student Book with Online Edition (2018).

- Section 4 – Mechanics, • Section 5 – Materials, • Section 8 – Thermal Physics
- Section 3 – Waves

Coursework: Core Physics A skills 1, 50%

Coursework: Core Physics A skills 2, 50%

Foundation Physics B [*electricity.fields.atoms*]

Material will be selected from Sections of the main course book: A-Level Physics for AQA: Year 1 & 2 Student Book with Online Edition (2018).

- Section 1 – Particles and Radiation, • Section 6 – Electricity, • Section 10 – Capacitors, • Section 2 – Electromagnetic Radiation and Quantum Phenomena,
- Section 9 – Gravitational and Electric Fields, • Section 12 – Nuclear Physics

Coursework: Core Physics B skills 1, 50%

Coursework: Core Physics B skills 2, 50%

Foundation Physics Laboratory † [*design.analysis.experiments*]

- Experimental Design
- Methods of Scientific Measurement
- Data Analysis and Errors
- Experiments covering: Mechanics, Thermal Physics, Electricity, and Waves

Coursework: Core Laboratory skills, 50%

Coursework: Laboratory Journal, 50%

Foundation IT and Study Skills [*careers.skills.exercises*]

- Seminar Series - Careers in Physics and Engineering
- IT Skills
- Presentation Skills
- Problem-based Learning Exercises

Coursework: Core Physics skills, 50%

Coursework: IT skills, 50%

† **For Mathematics with Foundation Year students only, the following module replaces Foundation Physics Laboratory:**

Introduction to Probability and Statistics [*probability.statistics.properties*]

- **Outline contents:** basic statistics and using “R programming language”
- Statistical graphs, confidence intervals. Probability properties, functions and graphs
- Combinatorics. Expectation and variance
- Hypothesis testing and comparisons of populations
- Central limit theorem. Nonparametric statistics

Coursework: Core skills 1, 50%

Coursework: Core skills 2, 50%

Trimester 1

Foundation Mathematics 1 [*algebra.geometry.matrices*]

- **Outline contents:** algebra, formulae and manipulation
- Functions, graphs and properties
- Trigonometry
- Co-ordinate systems, geometry and matrices

Coursework: Core Maths skills 1, 50%

Coursework: Core Maths skills 2, 50%

Trimester 2

Foundation Mathematics 2 [*vectors.calculus.series*]

- **Outline contents:** Vectors and complex numbers
- Introduction to calculus
- Differentiation of functions and rules of differentiation
- Integration of functions and rules of integration
- Sequences and series

Coursework: Core Maths skills 3, 50%

Coursework: Core Maths skills 4, 50%

Note on week numbers. Week numbering starts with Induction Week as week 0, and then Trimester 1 (T1) *teaching weeks* start with week 01. The *timetabling week* numbers then continue throughout the year, up to week 51 (including vacation weeks) – shown in brackets on next page. It is useful to list timetabling and teaching weeks – the latter such as in Trimester 2: T2-01 being the first teaching week of Trimester 2. *See the next pages for detailed breakdowns of dates and week numbering.*

<u>Week</u>	Week	<u>Assessment</u>
Trimester weeks	Timetable weeks	<u>TRIMESTER ONE (T1)</u>
T1-07	07	Foundation Mathematics 1. Core maths skills 1, 50% Due week T1-07 (07), Thurs 31 Oct 2024 [<i>i.e. the no-class day for all</i>]
T1-12	12	Foundation Physics A. Core physics A skills 1, 50% Due week T1-12 (12), Mon 02 Dec 2024 Foundation Physics B. Core physics B skills 1, 50% Due week T1-12 (12), Tues 03 Dec 2024 [Foundation Physics Laboratory. Core laboratory skills, 50% Due week T1-12 (12), Wed 04 Dec 2024 OR Introduction to Probability and Statistics. Core skills 1, 50% Due week T1-12 (12), Wed 04 Dec 2024] Foundation IT and Study Skills. Core physics skills, 50% Due week T1-12 (12), Thurs 05 Dec 2024 Foundation Mathematics 1. Core maths skills 2, 50% Due week T1-12 (12), Fri 06 Dec 2024
		<u>TRIMESTER TWO (T2)</u>
T2-08	25	Foundation Mathematics 2. Core maths skills 3, 50% Due week T2-08 (25), Tues 04 Mar 2025 [<i>Tues Maths class cancelled</i>]
T2-12	32	Foundation Physics A. Coursework: Core physics A skills 2, 50% Due week T2-12 (32), Tues 22 Apr 2025 Foundation Physics B. Coursework: Core physics B skills 2, 50% Due week T2-12 (32), Wed 23 Apr 2025 [Foundation Physics Laboratory. Laboratory journal, 50% - due week T2-12 (32), Thurs 24 Apr 2025 OR Introduction to Probability and Statistics. Core skills 2, 50% Due week T2-12 (32), Thurs 24 Apr 2025] Foundation IT and Study Skills. IT skills, 50% Due week T2-12 (32), Fri 25 Apr 2025
T2-13	33	Foundation Mathematics 2. Core maths skills 4, 50% Due week T2-13 (33), Mon 28 Apr 2025

Academic Year by Week 2024/25 - with Foundation Year Assessments

week begins (Monday)	Trimesters	timetable wk no	pool rooms bookable for teaching and revision	
9 September 2024	<i>Welcome/Induction</i>	0		
16 September 2024	Trimester 1	1	1	✓
23 September 2024	Trimester 1	2	2	✓
30 September 2024	Trimester 1	3	3	✓
7 October 2024	Trimester 1	4	4	✓
14 October 2024	Trimester 1	5	5	✓
21 October 2024	Trimester 1	6	6	✓
28 October 2024	Trimester 1	7	7	✓
4 November 2024	Trimester 1	8	8	✓
11 November 2024	Trimester 1	9	9	✓
18 November 2024	Trimester 1	10	10	✓
25 November 2024	Trimester 1	11	11	✓
2 December 2024	Trimester 1	12	12	✓
9 December 2024	Trimester 1	13	13	✓
16 December 2024	<i>Christmas Vacation</i>	14		
23 December 2024	<i>Christmas Vacation</i>	15		
30 December 2024	<i>Christmas Vacation</i>	16		
6 January 2025	<i>Welcome/Induction</i>	17		✓
13 January 2025	Trimester 2	1	18	✓
20 January 2025	Trimester 2	2	19	✓
27 January 2025	Trimester 2	3	20	✓
3 February 2025	Trimester 2	4	21	✓
10 February 2025	Trimester 2	5	22	✓
17 February 2025	Trimester 2	6	23	✓
24 February 2025	Trimester 2	7	24	✓
3 March 2025	Trimester 2	8	25	✓
10 March 2025	Trimester 2	9	26	✓
17 March 2025	Trimester 2	10	27	✓
24 March 2025	Trimester 2	11	28	✓
31 March 2025	<i>Easter Vacation</i>	29		
7 April 2025	<i>Easter Vacation</i>	30		
14 April 2025	<i>Easter Vacation</i>	31		(Bank Holiday Friday)
21 April 2025	Trimester 2	12	32	✓
28 April 2025	Trimester 2	13	33	✓
5 May 2025	Trimester 2	14	34	✓

ASSESSMENTS

MATHS 1

FPA, FPB, LAB or P&STATS, F IT & SKILLS, MATHS 2

MATHS 3

(Bank Holiday Friday)

(Bank Holiday Monday) FPA,FPB,LAB/P&STATS, FIT&SKILLS

MATHS 4

(Bank Holiday Monday)