IMPERIAL

Department of Physics

COURSE TABLE
F303 MSci Physics

The information provided on this form represents the course structure as taught in the 2023–2024 academic year. While we don't expect modules on offer to deviate from this structure in 2024–25, we do reserve the right to make changes.

(T) = Theoretical electives

YEAR 1

CORE

Everyone takes these:

- Mechanics and Relativity
- Oscillations and Waves
- Statistics of Measurement and the Summer Project
- Vector Fields, Electricity and Magnetism
- Practical Physics: Laboratory, Computing and Problem Solving

ELECTIVES

Choose ONE:

- Advanced Electronics
- Language Course (Year Abroad only)
- Mathematical Analysis (core for Theoretical Physics Degree)

YEAR 2

CORE

Everyone takes these:

- Advanced Practical Physics
- Differential Equations and Electromagnetism
- Quantum Physics
- Thermal Physics and Structure of Matter

ELECTIVES

Choose THREE (one must be i-Explore)

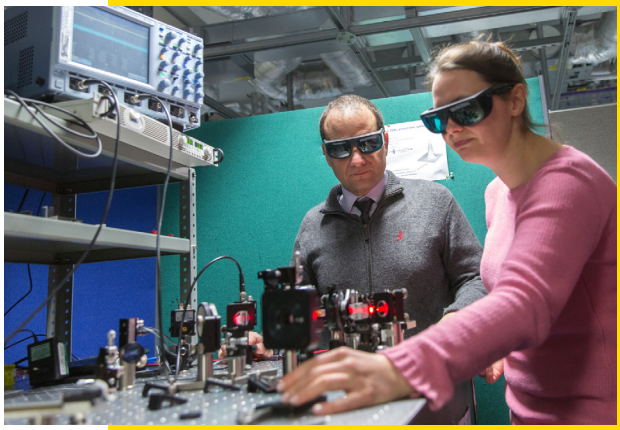
- Communicating Physics
- Environmental Physics
- I-Explore electives (For Year Abroad, Language Course)
- Mathematical Methods (core for Theoretical Physics degrees)
- Sun, Stars and Planets

YEAR 3

CORE

Everyone takes these:

- Comprehensives
- Nuclear and Particle Physics
- Solid State Physics
- Laboratory



ELECTIVES

Choose at least FOUR:

- Advanced Classical Physics (core for Theoretical Physics degrees)
- Astrophysics (T)
- Complexity and Networks (T)
- Computational Physics (T)
- Data Science and Machine Learning for Physics
- Foundations of Quantum Mechanics (T)
- Group Theory (T)
- Lasers
- Physics of Medical Imaging and Radiotherapy
- Plasma Physics
- Principles of Instrumentation
- Statistical Mechanics (T)
- Year 3 project
- Essay project

YEAR 4

CORE

Everyone takes these:

- MSci Research Project
- Research Interfaces

ELECTIVES

Choose at least FOUR:

- Advanced Particle Physics (T)
- Atmospheric Physics
- Concepts in Device Physics
- Cosmology
- Data Science and Machine Learning for Physics
- Entrepreneurship for physicists
- General Relativity (T)
- Hydrodynamics
- Information Theory
- Introduction to Plasmonics and Metamaterials
- Laser Technology
- Optical Communications
- Quantum Field Theory (T)
- Quantum Information (T)
- Quantum Optics
- Quantum Theory of Matter (T)
- Research Interfaces
- Space Physics
- Unification – the Standard Model (T)
- MSci Project
- Rapid Feedback

Differences between degree programmes

F390 MSci Physics with Theoretical Physics

Year 1: Mathematical Analysis elective is required
Year 2: Mathematical Methods elective is required
Year 3: Adv. Classical Phys. required instead of Laboratory III
Year 4: Research Project must be in theoretical physics

37.5 ECTS over years 3 and 4 must be theoretical electives (T)

F300 BSc Physics

First 3 years of MSci F303 but project replaces one elective in Year 3.

F325 BSc Physics with Theoretical Physics

First 3 years of MSci F390 but Theoretical Project replaces one elective and two electives must be theoretical.

F309 MSci Physics with a Year Abroad

Year 1: Language course is required unless fluent speaker
Year 2: Language course required (taken as i-Explore choice).
Year 3: Spent at partner university. Includes major project in a research group. Physics lecture courses and exams in host country's language
Year 4: Courses chosen from Years 3 and 4 of MSci F303 programme

Year 2 i-Explore

Examples

- Creative Writing
- Law and Professional Ethics for Science and Technology
- Multidisciplinary Project Module
- Music Technology
- Philosophy and the Human Sciences
- Understanding our Digital World

Business School electives

- Accounting Online
- Business Economics
- Corporate Finance Online
- Entrepreneurship Online
- Managerial Economics Online

Business School teaching space at Scale Space