Syllabuses

All course unit syllabuses can be accessed via the "Course Unit Information" portlet under "my Learning" on My Manchester. Quick links to Physics and selected other course are given below. The programme structure tables in section 9 should be consulted for definitive core/option information for each programme.

Course units for year 1

Title	Code	Credit rating	Core/Option
Mathematics 1	PHYS10071	10	Core
Dynamics	PHYS10101	10	Core
Quantum Physics and Relativity	PHYS10121	10	Core
Year 1 Lab Work (All Yr)	PHYS10180	20	Core
Year 1 Lab Work (One Semester)	PHYS10280	10	Core (Maths/Phys, theory)
Introduction to Astrophysics and Cosmology	PHYS10191	10	Core
Vibrations & Waves	PHYS10302	10	Core
Electricity & Magnetism	PHYS10342	10	Core
Properties of Matter	PHYS10352	10	Core
Mathematics 2	PHYS10372	10	Core
Physics in Everyday Life	PHYS10461	10	Option
Random Processes in Physics	PHYS10471	10	Core (Theory) Option (other)
Physics of Energy Sources	PHYS10622	10	Option
Advanced Dynamics	PHYS10672	10	Core (Theory) Option (other)
Physics of the Solar System	PHYS10692	10	Option
Introduction to Data Science	PHYS10792	10	Option
Foundations of Pure Mathematics B	MATH10111	15	Core (Math/Phys)
Calculus and Vectors A	MATH10121	20	Core (Math/Phys)
Linear Algebra B	MATH10212	15	Core (Math/Phys)
Calculus and Applications A (Physics)	MATH11222	10	Core (Math/Phys)
Fundamentals of Management	BMAN10011	10	Option
Microeconomics 1	ECON10221	10	Option
Macroeconomics 1	ECON10252	10	Option

Title	Code	Credit rating	Core/Option
Science & the Modern World	HSTM10221	10	Option

Course units for year 2

Title	Code	Credit rating	Core/Option
Introduction to Quantum Mechanics	PHYS20101	10	Core
Electromagnetism	PHYS20141	10	Core
Introduction to Programming for Physicists	PHYS20161	10	Core
Mathematics of Waves and Fields	PHYS20171	10	Core
Year 2 Lab Work (All Yr)	PHYS20180	20	Core
Year 2 Lab Work (One Semester)	PHYS20280	10	Core (Math/Phys, Theory, Phil)
Fundamentals of Solid State Physics	PHYS20252	10	Core
Wave Optics	PHYS20312	10	Core
Statistical Mechanics	PHYS20352	10	Core
Physics of Energy Sources	PHYS10622	10	Option
Advanced Dynamics	PHYS10672	10	Option
Physics of the Solar System	PHYS10692	10	Option
Lagrangian Dynamics	PHYS20401	10	Core (Theory) Option (other)
Galaxies	PHYS20491	10	Core (Astro) Option (other)
Introduction to Photonics	PHYS20612	10	Option
Complex Variables and Vector Spaces	PHYS20672	10	Core (Theory) Option (other)
Astrophysical Processes	PHYS20692	10	Core (Astro) Option (other)
Computational Physics	PHYS20762	10	Option
Real Analysis B	MATH20111	10	Core (Math/Phys)

Title	Code	Credit rating	Core/Option
Partial Differential Equations and Vector Calculus A	MATH20401	20	Core (Math/Phys)
2P2: Complex Analysis	MATH29142	10	Core (Math/Phys)
Metric Spaces	MATH20122	10	Option (Math/Phys)
Algebraic Structures 1	MATH20201	10	Option (Math/Phys)
Algebraic Structures 2	MATH20212	10	Option (Math/Phys)
Fluid Mechanics	MATH20502	10	Option (Math/Phys, other)
Philosophy of Mind	PHIL20271	20	Option (Phil)
Phenomenology	PHIL20611	20	Option (Phil)
Ethics	PHIL20232	20	Option (Phil)
20th Century Analytical Philosophy	PHIL20242	20	Option (Phil)
Biodiversity	BIOL10511	10	Option
Atmospheric Physics and Weather	EART23001	10	Option
Microeconomics 1	ECON10221	10	Option
Science & the Modern World	HSTM10221	10	Option
Information visions: past, present and future	HSTM20282	10	Option
Introduction to Financial Mathematics	MATH20912	10	Option
Exploring Enterprise	MCEL10001	10	Option
Entrepreneurial Skills	MCEL10002	10	Option

Course units for year 3

Title	Code	Credit rating	Core/Option
Condensed Matter Physics	PHYS30051	10	Core (MPhys) Option (other)
Introduction to Nuclear and Particle Physics	PHYS30121	10	Core
Yr3 Physics Laboratory Work (All Year)	PHYS30180	20	Core
Yr 3 Physics Laboratory (One block)	PHYS30280	10	Core (Theory) Option (Math/Phys)
Cosmology	PHYS30392	10	Core (MPhys and Astro) Option (other)
Particle Physics	PHYS40222	10	Core (MPhys) Option (other)

Title	Code	Credit rating	Core/Option
Nuclear Physics	PHYS40322	10	Core (MPhys) Option (other)
Applications of Quantum Physics	PHYS30101	10	Option
Electromagnetic Radiation	PHYS30141	10	Option
Mathematical Fundamentals of Quantum Mechanics	PHYS30201	10	Core (Theory) Option (other)
Electrodynamics (M)	PHYS30441	10	Option
Introduction to Non-linear Physics	PHYS30471	10	Option
Nuclear Fusion and Astrophysical Plasmas	PHYS30511	10	Option
Lasers and Photonics	PHYS30611	10	Option
Physics of Medical Imaging	PHYS30632	10	Option
Physics of Fluids	PHYS30652	10	Option
Mathematical Methods for Physics	PHYS30672	10	Core (Theory) Option (other)
Stars and Stellar Evolution	PHYS30692	10	Core (Astro) Option (other)
Physics of Living Processes	PHYS30732	10	Option
Object-Oriented Programming in C++	PHYS30762	10	Option
Exoplanets	PHYS31692	10	Option
Advanced Quantum Mechanics	PHYS40202	10	Core (Theory) Option (other)
Applied Nuclear Physics	PHYS40422	10	Option
Semiconductor Quantum Structures	PHYS40712	10	Option
Physics and Reality	PHYS41702	10	Core (Phil) Option (other)
Quantum Computing	COMP39112	10	Option
Comparative Planetology	EART30232	10	Option
Climate and Energy: Past, Present and Future	EART36002	10	Option
Meteorology and Atmospheric Physics	EART39102	10	Option
Information visions: past, present and future	HSTM20282	10	Option
The Nuclear Age: Global Nuclear Threats from Hiroshima to Today	HSTM31212	10	Option
Viscous Fluid Flow	MATH35001	10	Option
Wave Motion	MATH35012	10	Option
Mathematical Modelling in Finance	MATH39032	10	Option
Tools and Techniques for Enterprise	MCEL30001	10	Option
Tools & Techniques for Enterprise	MCEL30002	10	Option

Title	Code	Credit rating	Core/Option
Advanced Technology Enterprise	MCEL30012	10	Option
Interdisciplinary Sustainable Development	MCEL30022	10	Option

Course units for year 4

Title	Code	Credit rating	Core/Option
MPhys Project	PHYS40181	20	Core
MPhys Project	PHYS40182	20	Core
Frontiers of Solid State Physics	PHYS40411	10	Option
Nuclear Structure and Exotic Nuclei	PHYS40421	10	Option
Applied Nuclear Physics	PHYS40422	10	Option
Superconductors and Superfluids	PHYS40451	10	Option
Quantum Field Theory (M)	PHYS40481	10	Option
Frontiers of Particle Physics I	PHYS40521	10	Option
Advanced Statistical Physics	PHYS40571	10	Option
Radio Astronomy	PHYS40591	10	Option
Frontiers of Photon Science	PHYS40611	10	Option
Nuclear Forces and Reactions	PHYS40622	10	Option
Laser Photomedicine	PHYS40631	10	Option
Atomic Physics	PHYS40642	10	Option
Gauge Theories (M)	PHYS40682	10	Option
Semiconductor Quantum Structures	PHYS40712	10	Option
Frontiers of Particle Physics II	PHYS40722	10	Option
Biomaterials/Biophysics	PHYS40732	10	Option
Soft Matter Physics	PHYS40752	10	Option
Gravitation	PHYS40771	10	Option
Early Universe	PHYS40772	10	Option
Galaxy Formation	PHYS40992	10	Option
Physics and Reality	PHYS41702	10	Option