

PROFESSIONALLY ACCREDITED DEGREE ROUTE IN THEORETICAL PHYSICS

May 14, 2025

OM: Open Module, TE: Trinity Elective

JF - JS: Core SoM SS Optional Core	JF - JS: OM SoM SS: Optional non-core	JF - JS: Core SoP SS: Optional Core	JF - JS: OM SoP SS: Optional non-core	TE/OM Other Schools	SS Capstone
10 credits					
5 credits					

Module prerequisites are suppressed for concision

Teaching Council requirements for Mathematics or Appl. Maths are labelled by %

School of Mathematics						Jointly Taught	School of Physics			Note: contents of School of Physics modules in Fresher years:	
JF Michaelmas		Calculus		Linear Algebra	Classical Mechanics I		Physics 1 for Theoretical Physics			Physics 1 for TP: Intro (3), Special Rel. (15), Waves & Optics I (20), Statistics (10) Physics 2: Electricity & Magnetism I, Quantum Physics, Gravitation & Astrophysics	
JF Hilary		Techniques for Theoretical Physics	Advanced Calculus	Linear Algebra	Classical Mechanics II		Physics 2 for Phys. Sci. & TP			Physics 3: Thermodynamics, Electricity & Magnetism II, Materials, Oscillations  Physics 4 for TP: Chaos, Nuclear & Particle, Observing the Universe, Waves & O. II	
JF: 60 TP core with 40 SoM + 20 SoP											
SF Michaelmas		Introduction to Programming	Group Theory	Equations of Math. Physics I	Adv. Classical Mechanics I		Physics 3 for Phys. Sci. & TP			Other Schools	
SF Hilary		Euclidean & Non-E. Geometry %	Analysis on the Real Line	Complex Analysis	Adv. Classical Mechanics II		Physics 4 for Theoretical Physics			Trinity Elective	
SF: 40 TP core with 20 SoM core + 20 SoP + 10 OM + 10 TE											
							Computer Simulation I				
JS Michaelmas	Linear Programming	Analysis in Several Real Variables	Statistical Physics I	Classical Field Theory	Quantum Mechanics I		Condensed Matter Physics I	Practical 1 for TP	Stellar & Galactic Structure	Statistics (STU23501)	
JS Hilary	Introduction to Numerical Analysis	Calculus on Manifolds %	Statistical Physics II	Electrodynamics	Quantum Mechanics II		Atomic Physics & Statistical Thermodynamics	Practical 2 for TP	Condensed Matter Physics II (Semiconductors)	Statistics (STU22005)	
							Practical: Experimental & Computational Laboratories, Outreach, Careers, Safety, Communication Skills				
JS: 50 TP core with 30 SoM core + 20 SoP + 10 OM											
SS Michaelmas		Non-core modules in Mathematics	Practical Numerical Simulations	Quantum Field Theory I ^	Applied Differential Geometry ^	SS Capstone Research Project: 20 ECTS Module.	Problem Solving in Physics	Condensed Matter Theory			
SS Hilary		Non-core modules in Mathematics	Standard Model of Particle Physics ^^	Quantum Field Theory II	General Relativity		Equally balanced across semesters.	Nuclear & High Energy Physics ^^	Quantum Plasmonics and Metamaterials ~	Cosmology ~	Note: module choice requirements for SS:
						Either a SoM or SoP module is chosen.	Quantum Optics & Information	Energy Science	Computer Simulation II	1) Module prerequisites will be listed on the module choice form. 2) Problem Solving is mandatory. 3) Outside of the Capstone project, in SS year each student must take at least 5 credits from each School in each semester. 4) At least one of the modules labelled ^ must be chosen. QFT is a full-year module. 5) At least one of the modules labelled ^^ must be chosen, but not both. QFTI is a prerequisite for Standard Model. 6) The modules labelled ~ cannot both be selected.	

SS: 40 TP core & non-core + 20 Capstone core

SS non-core modules in SoM vary by year.