PROFESSIONALLY ACCREDITED DEGREE ROUTE IN THEORETICAL PHYSICS

June 25, 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			
JF Michaelmas	Calculus		Linear Algebra	Classical Mechanics I		Physics 1 for Theoretical Physics			
JF Hilary	Techniques for Theoretical Physics	Advanced Calculus	Linear Algebra	Classical Mechanics II		Physics 2 for Phys. Sci. & TP			
SF Michaelmas	Introduction to Programming	Group Theory	Equations of Math. Physics I	Adv. Classical Mechanics I		Physics 3 for Phys. Sci. & TP			
SF Hilary	Euclidean & Non-E. Geometry %	Analysis on the Real Line	Complex Analysis	Adv. Classical Mechanics II		Physics 4 for Theoretical Physics			
JS Michaelmas		Analysis in Several Real Variables	Statistical Physics I	Classical Field Theory	Quantum Mechanics I		Condensed Matter Physics I	Practical 1 for TP	Computer Simulation I / Stellar & Galactic Structure
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)
							Practical: Experimental & Computational Laboratories, Outreach, Careers, Safety, Communication Skills		
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 ~	
					Either a SoM or SoP module is chosen.	Quantum Optics & Information	Energy Science	Computer Simulation II	

JF: 60 TP core with 40 SoM + 20 SoP

SF: 40 TP core with 20 SoM core + 20 SoP + 10 OM + 10 TE

JS: 50 TP core with 30 SoM core + 20 SoP + 10 OM

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

SS non-core modules in SoM vary by year.

Note: contents of School of Physics modules in Fresher years:

Physics 1 for TP: Intro (3), Special Rel. (15), Waves & Optics I (20), Statistics (10)

Physics 2: Electricity & Magnetism I, Quantum Physics, Gravitation & Astrophysics

Physics 3: Thermodynamics, Electricity & Magnetism II, Materials, Oscillations

Physics 4 for TP: Chaos, Nuclear & Particle, Observing the Universe, Waves & O. II

Other Schools

Trinity Elective

Trinity Elective

Statistics (STU23501)

Statistics (STU22005)

Note: module choice requirements for SS:

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.