

MMathPhys, overview of lecture courses

Students have to attend at least 10 units, with one unit corresponding to a 16-hour lecture course, from the set of courses below. There is considerable freedom in the choice of courses and students will be able to design their own pathway through the programme. The table intends to give a general idea of the programme's content and represents the currently envisaged set of courses. Individual courses may change in the future in line with general curriculum development.

Overview of Lecture Courses				
	<i>Theoretical Particle Physics</i>	<i>Theoretical Condensed Matter Physics</i>	<i>Theor. Astrophysics, Plasma Physics & Physics of Continuous Media</i>	
MT	Quantum Field Theory (24)			
			Statistical Mechanics ^(MU:C6.2a) (16)	
		Intro. Quant. CMP^(PU:C6) (16)		
		Nonequilibrium Statistical Physics^(PU:C6) (8)		
		Kinetic Theory (24)		
		Viscous Flow ^(MU:B6a) (16)		
		Gen. Relativity I^(MU:C7.2a) (16)	⇐ ⇒	Gen. Relativity I^(MU:C7.2a) (16)
		Perturbation Methods^(MU:C6.3a) (16)		
		Scientific Computing I ^(MG) (12)		
		Numerical Solutions to Differential Equations I ^(MU:B21a) (16)		
		Numerical Linear Algebra ^(MU:C12.1a) (16)		
	HT	Groups and Representations (24)		
<i>Algebraic Topology^(MU:C3.1a) (16)</i>				
<i>Algebraic Geometry^(MU:C3.4a) (16)</i>				
		Advanced Fluid Dynamics (16)		
		Soft Matter Physics (16)		
		Nonlinear Systems ^(MU:B8b) (16)		
<i>Advanced QFT (24)</i>		<i>Quant. CMP II^(PU:C6) (24)</i>	<i>Waves & Comp. Flow^(MU:B6b) (16)</i>	
<i>String Theory I^(MG) (16)</i>		<i>Networks^(MU:C6.2b) (16)</i>	<i>Plasma Physics (16)</i>	
<i>Supersymmetry & SUGRA (24)</i>			<i>Galactic & Planetary Dyn. (16)</i>	
			<i>Stellar Astrophysics^(PU:C1) (16)</i>	
Gen. Relativity II^(MU:C7.2b) (16)		⇐ ⇒	Gen. Relativity II^(MU:C7.2b) (16)	
Cosmology (16)		⇐ ⇒	Cosmology (16)	
	Applied Complex Variables ^(MU:C6.3b) (16)			
	Scientific Computing II ^(MG) (12)			
	Numerical Solutions to Differential Equations II ^(MU:B21b) (16)			
	Differential Geometry (16)	⇐ ⇒	Differential Geometry (16)	
	<i>Geom. Group Th.^(MU:C3.2b) (16)</i>			
TT	Conformal Field Theory (16)			
	Introduction to Gauge-String Duality (16)			
		Topics in Soft & Active Matter Physics (8)		
		Complex Systems ^(MG,*) (16)		
	<i>String Theory II^(MG,*) (16)</i>	<i>Advanced Quant. CMP (8)</i>	<i>Turbulence^(*) (16)</i>	
	<i>The Standard Model (16)</i>	<i>Topics in Quant. CMP (8)</i>	<i>Geophys. Fluid Dynamics (16)</i>	
	<i>Beyond the St. Model (16)</i>	<i>Critical Phenomena^(*) (16)</i>	<i>Advanced Plasma Physics (16)</i>	
	<i>Nonpert. Meth. in QFT (16)</i>		<i>Astrophys. Fluid Dynamics (16)</i>	
			<i>High-Energy Astrophysics^(*) (16)</i>	
	Astroparticle Phys. ^(*) (16)	⇐ ⇒	Astroparticle Phys. ^(*) (16)	
	QFT in Curved Space ^(*) (16)	⇐ ⇒	QFT in Curved Space ^(*) (16)	
	Dissertation, replacing one 16-hour lecture course			

Legend for fonts, colours and superscripts in the Table:

Bold: a foundational course

Plain: an interdisciplinary course shared between strands

Italic: a course special to a particular strand

Red^(PU:NN): a course also taught (in some cases in part) as a Part C course in Physics, NN is its number;

Blue^(MU:NNN): a course also taught as a Part B or C course in Mathematics, NNN is its number

Purple^(MG): a course also taught as a PG course in Mathematics

Black: an MMathPhys/MSc course, also taught as a PG course in Physics

(*) a course that may not be available every year.