

Curriculum Theoretical Physics

Suggested Study Paths

The following are only suggested study paths, students are free to completely personalize their curriculum within the constraints of the course-group choices.

Research opportunities: DIFA website — <https://physics-astronomy.unibo.it/en/research/research-areas/theoretical-physics>

Course group	Path A Astroparticle Theory	Path B Gravitation & Cosmology	Path C Phenomenology of Fundamental Interactions	Path D Quantum Field Theory	Path E String Theory	Path F Quantum Many-Body Inform. & Computation
Mandatory	General Relativity + Quantum Field Theory 1 + Symmetries and Path Integrals + Statistical Mechanics					
Group 1	QFT2	QFT2	QFT2	QFT2 / StatFT	QFT2	StatFT
Group 2 (2 choices)	Standard Model Th. Astr. Phys.	Black Holes Quant. Cosmo.	Standard Model, at will (Th. Astr. Phys.)	Adv. Math. Meth. / SM / Group Th.	Quant. Cosmo. / SM / Group Th.	Quan. Inf. Th. / Intr. to Quan. Many-body S.
Group 3 (1 choice)	GW Phys. / Astrop. Phys.	GW Phys.	at will	at will	at will	Dyn. Systems & Ergodic Theory
Group 4 (1 choice)	at will	at will	Nucl. Phys. / Th. Num. Nuc. Ph.	at will	at will	Int. Corr. Cond. M. / Quan. Sc. Tech.
Group 5 (1 choice)	Beyond SM	Adv. QFT	QCD / Adv. SM / Beyond SM	Adv. QFT	String Th. / SUSY	Quan. Comp. / Adv. Math. Met./ QMBT
Free choice 1	Adv. SM / SUSY / Quant. Cosmo.	Adv. Math. Meth.	QCD / Adv. SM / Beyond SM	QFT2 / StatFT	String Th. / SUSY	Quan. Comp. / Adv. Math. Meth./ QMBT
Free choice 2	at will	at will	QCD / Adv. SM / Beyond SM / SUSY / Adv. QFT	SUSY / String Th. / Adv. Met. QMBT	at will	Adv. Math. Meth. / Group Th. / Th. Num. Nuc. Ph. / any course on Quan. Inf. & Comp.
Madatoty	Transversal Skills for Physics-Related Professions (2nd y)					
	Advanced Professional and Research Skills in Physical Sciences (2nd y)					
	Complemento di Competenze Trasversali Avanzate per la Fisica (2nd y)					
	Master Thesis (24+12 CFU)					