

Corso di Laurea Magistrale in Physics — Università di Bologna

Curriculum Physics of Matter

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/physics-of-condensed-matter-atoms-and-molecules>

	Path A Experimental Material Physics	Path B Theoretical and Computat. Matter Physics	Path C Quantum Science & Technologies
Mandatory	Condensed Matter Physics I (1st sem.) + Condensed Matter Physics II (2nd sem.)		
	Laboratory of Condensed Matter Physics (1 st sem)	Computational Material Physics (1 st sem)	Quantum Sciences and Technologies (2 nd sem)
	Laboratory of Nanoscience and Nanotech (2 nd sem)	Materials Modelling and Design (2 nd sem)	Quantum Computing (1 st sem 2 nd y)
	Semiconductor Materials and Nanostr. (1 st sem)	Inter. and Correl. in Cond. Matter (2 nd sem)	Semiconductor Materials and Nanostr. (1 st sem)
	Physics of Energy Materials (1 st sem)	Physics of Energy Materials (1 st sem)	Magnetism and Superconductivity (2 nd sem)
	X-Ray & Electrons for Nanoscale Analysis of Matter (2 nd sem)	Statistical Mechanics (1 st sem)	Quantum Information Theory (2 nd sem) as free choice-maybe anticipated to 1st y
	Magnetism and Superconductivity (2 nd sem)	Intro to Quantum Many-Body Systems (2 nd sem) — as free choice, may be anticipated to 1st y	Intro to Quantum Many-Body Systems (2 nd sem) — as free choice.
	+ 1 theor./didactic course from Group 4 + 2 free choice from anywhere	+ 1 from Group 1 + 1 from Group 2 + Advanced Methods in Quantum Many-Body Theory (1 st sem 2nd y as free choice)	+ 3 from Group 1 (incl. Lab course if experimental thesis)
	1 course among: Electronics for App. Phys.(1 st sem), Software and Computing for App. Phys. (1 st sem), Statistical Data Analysis for App.Phys. (2 nd sem)		
Mandatory	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)		