Curriculum B: Biophysics path

Type of Educational Activity / Area	ECTS Area	Codes	Courses	ECTS	SSD	Semester
Core – Experimental and Applied	22	F1703Q016	LABORATORY OF BIOPHOTONICS I	10	FIS/07	I
		F1703Q017	LABORATORY OF BIOPHOTONICS II	6	FIS/07	II
		F1703Q005	BIOPHOTONICS	6	FIS/07	I
Core - Theoretical and Foundations of Physics	6	F1703Q052	STATISTICAL MECHANICS	6	FIS/02	I
Core - Microphysics of Matter and Fundamental Interactions	12	F1703Q030	OPTICAL MICROSCOPY	6	FIS/03	II
		One course to be chosen from:				
		F1703Q007	ENERGY PHYSICS	6	FIS/03	II
		F1703Q049	SOLID STATE PHYSICS	6	FIS/03	I
		F1703Q048	(*) RIVELATORI DI RADIAZIONI	6	FIS/04	I
Related / Supplementary Educational Activities	18	Three courses to be chosen from:				
		F1703Q006	COMPUTATIONAL MATERIALS SCIENCE	6	FIS/03	I
		F1703Q026	MACHINE LEARNING APPLICATIONS	6	FIS/07	II
		F1703Q025	MACHINE LEARNING AND STATISTICAL PHYSICS OF MACROMOLECULAR SYSTEMS	6	FIS/07	II
		F1703Q029	(*) NANOBIOTECNOLOGIE	6	BIO/10	II
		F1703Q045	QUANTUM PHOTONICS	6	FIS/03	I
Elective course (chosen by the student)	12	Two courses to be chosen from:				
		F1703Q002	APPLICATIONS OF PHYSICS TO MEDICINE - MEDICAL PHYSICS	6	FIS/07	I
		F1703Q048	(*) RIVELATORI DI RADIAZIONI	6	FIS/04	I
		F1703Q058	OPTICAL SPECTROSCOPY OF SOLIDS	6	FIS/03	II

Courses marked with (*) are taught in Italian

Curriculum B: Biophysics path -> personalized study plan -> replace «solid state physics» with «quantum photonics»

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		F1703Q017	LABORATORY OF BIOPHOTONICS II	6	FIS/07	II
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Core - Theoretical and Foundations of Physics	6	F1703Q052	STATISTICAL MECHANICS	6	FIS/02	I
Core - Microphysics of Matter and Fundamental Interactions	12	F1703Q030	OPTICAL MICROSCOPY	6	FIS/03	II
		F1703Q045	**QUANTUM PHOTONICS**	**6**	**FIS/03**	**I**
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		F1703Q058	OPTICAL SPECTROSCOPY OF SOLIDS	6	FIS/03	II

MSc in Physics · Curriculum B

Biophysics

Physics of living matter: from single molecules to cells and tissues

Depending on the student's interests and the topic of the Master's thesis, whether experimental, focused on image analysis, or based on simulations, elective courses may also be selected from the AI Master's programme, in agreement with the thesis supervisor

- **Multiphoton fluorescence microscopies**
- **Aberration correction in deep tissues**
- **Digital Holography**
- **Antibunching signal detection**
- **AI-based image analysis**
- **Digital pathology**
- **Agent based immune system modelling**