UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA
Dipartimento di Scienze Fisiche, Informatiche e Matematiche

Curriculum *Bio-physics and Applied Physics*

Year	Name of the course	Hours		SSD	Term		Notes	✓
First year	***B - Distinctive courses (Corsi caratterizzanti)***		***36***					
	Mandatory courses							
	There is no mandatory courses for this curriculum							
	Choose two courses among							
	Laboratory of nanostructures	60	6	FIS/01	I	II		☐
	Advanced spectroscopic and imaging methods	48	6	FIS/01		II		☐
	Magnetism, spintronics and quantum technologies	48	6	FIS/01	I			☐
	Choose four courses among							
	Quantum physics of matter	48	6	FIS/03	I			☐
	Physics of semiconductors	48	6	FIS/03		II		☐
	Nanoscience and quantum materials	48	6	FIS/03		II		☐
	Laboratory of quantum simulation of materials	60	6	FIS/03	I	II		☐
	Machine learning for scientific applications	48	6	FIS/03	I			☐
	C - Related courses (Corsi affini)		***24***					
	Choose four courses among							
	Nano-mechanics	48	6	FIS/01	I			☐
	Laboratory of electron microscopy and holography	48	6	FIS/01	I			☐
	Synchrotron radiation: basics and applications	48	6	FIS/01	I			☐
	Biological physics with laboratory	60	6	FIS/07	I	II		☐
	Chemical physics of biomolecules	36	6	FIS/07	I			☐
	Medical physics	48	6	FIS/07		II		☐
	Physics education: theoretical and experimental methods	36	6	FIS/08		II		☐
	High Performance Computing for physical sciences	48	6	FIS/03		II		☐
	Computational and statistical learning	48	6	MAT/08		II	*M.S. in Mathematics - IT*	☐
	Numerical algorithms for signal and image processing	36	6	MAT/08		II	*M.S. in Mathematics - IT*	☐
	Complex systems	42	6	INF/01		II	*M.S. in Computer Science*	☐
	Elementary particles	48	6	FIS/04	I			☐
Second year	***B - Distinctive courses (Corsi caratterizzanti)***		***6***					
	Choose one course among							
	Advanced quantum mechanics	48	6	FIS/02	I			☐
	Relativity	48	6	FIS/02	I			☐
	D - Free choice courses (Corsi a scelta libera)		***12***					
	Choose At least 12 ECTSs among all of the above courses, or any other course offered at UNIMORE							
	E - Thesis project and dissertation		***36***					
	F - Professional preparation (Corsi professionalizzanti)		***6***					
	Choose 6 ECTSs among							
	Good Practices in Research		3		I			☐
	Physics and society		3		I			☐
	Science-based innovation		6				*Attendance of CBI/SUGAR Unimore projects (see https://clab.unimore.it/)*	☐
	High-Performance-Computing in sciences		3				*Attendance of CINECA HPC courses (see https://eventi.cineca.it/en/hpc/catalogue)*	☐