

Physicist MSc (Responsible: Gábor Takács)

Quantum Technology Specialization (Responsible: Péter Makk)

Legend

Type: C - compulsory, E - elective modules, O - optional

Grading: e - examination, c - coursework grade, a - audit, ce - comprehensive examination

- Proposed semester, *proposed semester of elective courses, @-alternative semester

" - Proposed semester for courses running biannually, check the semesters remark (even / odd spring / fall)

Subject	Type	Eval	Credit	Hours			Semester (spring start)				Semester (fall start)				Semester course active			
				Lect	Prac	Lab	1	2	3	4	1	2	3	4				
GENERAL CURRICULUM																		
CRITERION COURSES			0															
Basic Physics Knowledge			C	a	0	0	0	0									every semester	
Internship QT			C	a	0	0	0	0		#		@			#		every fall	
CORE SUBJECTS			13															
Artificial Intelligence in Physics			C	e	5	1	0	2		#			#				every fall	
Physics Laboratory QT			C	c	6	0	0	4		#			#				every fall	
Colloquium Series 1			C	c	1	1	0	0		#				#			every semester	
Colloquium Series 2			C	c	1	1	0	0			#				#		every semester	
MANAGEMENT AND COMMUNICATION (one course from the list below)			E	e	3	2	0	0	3	0	0	0	0	3	0	0		
Innovation and Green Finance			E	e	3	2	0	0		*			*				every semester	
English for University Studies B2+			E	e	3	0	2	0		*			*				every spring	
Public Speaking B2+			E	e	3	0	2	0		*			*				every spring	
Academic Writing C1			E	e	3	0	2	0		*			*				every spring	
Professional Speaking C1			E	e	3	0	2	0		*			*				every spring	
Discussing Engineering C1			E	e	3	0	2	0		*			*				every spring	
CORE ELECTIVE PHYSICS COURSE (3 courses from the list below)			E	e	15				5	5	5	0	5	10	0	0		
Statistical Physics			E	e	5	2	1	0		*			*		*		every fall	
Particle Physics			E	e	5	2	1	0		*			*		*		every fall	
Nuclear Physics			E	e	5	2	1	0	*		*		*				every spring	
Quantum Physics of Atoms			E	e	5	2	1	0	*		*		*				every spring	
Nanophysics			E	e	5	2	1	0	*		*		*				every spring	
Nanotechnology and Materials Science			E	e	5	3	0	0	*			*		*			every fall	
Fundamentals of Photonics			E	e	5	2	1	0	*			*		*			every fall	
Computer Simulations in Physics			E	e	5	2	0	1	*		*		*				every spring	
DIPLOMA WORK																		
Diploma Work QT1			C	c	10	0	0	7				#				#	every semester	
Diploma Work QT2			C	c	20	0	0	13				#				#	every semester	
OPTIONAL COURSES (any BME course)			O		6					0	0	6	0	3	0	3	0	
QUANTUM TECHNOLOGY SPECIALIZATION																		
COMPULSORY FROM THE CORE PHYSICS COURSE BLOCK																		
Nanophysics			C	e	5	2	1	0	*					*			every spring	
Quantum Physics of Atoms			E	e	5	2	1	0	*		*			*			every spring	
COMPULSORY SPECIALISATION COURSES			C		36													
Seminar QT1			C	c	2	0	2	0	#				#				every semester	
Seminar QT2			C	c	2	0	2	0			#				#		every semester	
Project Laboratory QT1			C	c	7	0	0	5		#				#			every semester	
Project Laboratory QT2			C	c	13	0	0	8			#				#		every semester	
Quantum Computing Architectures			C	e	3	2	0	0		#					#		every fall	
Quantum Sensing and Quantum Communication			C	e	3	2	0	0	#					#			every spring	
Quantum Information Processing			C	e	3	2	0	0	#					#			every spring	
Emerging Devices and Architectures for Information Technologies			C	e	3	2	0	0	#					#			every spring	
ELECTIVE SPECIALIZATION COURSES (from the list below)			E		17				10	4	3	0	8	0	9	0		
Elective Project Laboratory QT			E	e	10	0	0	7	*				*				every semester	
Semiconductor Physics			E	e	3	2	0	0	*		*			*		*	every spring	
Physics of Advanced Semiconductor Devices			E	e	3	2	0	0	*					*			every spring	
Quantum Optics			E	e	5	2	1	0		*		*	*		*		every fall	
Topological Insulators			E	e	3	2	0	0		"		"	"		"		odd fall	
Modern Solid State Physics			E	e	7	3	2	0	*					*			every spring	
Superconductivity			E	e	3	2	0	0		*				*		*	every fall	
Transport in complex nanostructures			E	e	5	3	0	0	"		"			"		"	odd spring	
Quantum Technology Laboratory			E	c	3	0	0	2		*	@		*	@	@		every fall	
Artificial Intelligence in Data Science			E	c	5	1	0	2		*		*	*		*		every fall	
Advanced Quantum Mechanics			E	c	3	2	0	0	*		*			*		*	every spring	
Quantum World			E	e	3	2	0	0	"		"			"		"	odd spring	
TOTAL NUMBER OF CREDITS										29	31	30	30	29	30	31	30	