

Physicist MSc (Responsible: Gábor Takács)

Optics and Photonics Specialization (Responsible: Pál Koppa)

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

E/O - Proposed semester for courses running biannually: E (for students starting in even year) O (for students starting in odd year)

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 OP	C	a	0	0	0	0									every semester		
Internship OP	C	a	0	0	0	0		@		#			#		every fall		
CORE SUBJECTS			8														
Artificial Intelligence in Physics	C	e	5	1	0	2		#			#				every fall		
Physics Laboratory OP	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		
MANAGAMENT AND COMMUNICATION (one course from the list below)				E	3	2	0	0	0	0	3	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	15				10	5	0	0	10	5	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 OP 1	C	c	10	0	0	7					#			#	every semester		
Diploma Work OP 2	C	c	20	0	0	13					#			#	every semester		
OPTIONAL COURSES (any BME course)				O	6				0	3	3	0	0	0	6	0	
OPTICS AND PHOTONICS SPECIALIZATION																	
COMPULSORY FROM THE CORE PHYSICS COURSE BLOCK																	
Fundamentals of Photonics	C	e	5	2	1	0		*			*				every fall		
COMPULSORY SPECIALISATION COURSES				C	9												
Seminar OP 1	C	c	2	0	2	0	#				#				every semester		
Seminar OP 2	C	c	2	0	2	0			#				#		every semester		
Project Laboratory OP 1	C	c	7	0	0	5		#				#			every semester		
Project Laboratory OP 2	C	c	13	0	0	8			#				#		every semester		
Laser Physics	C	e	5	2	1	0	#		@			#			every spring		
Optical Design	C	e	6	2	2	0	#					#			every spring		
ELECTIVE SPECIALIZATION COURSES (30 credits from the list below)				E	18				7	3	8	0	7	3	8	0	
Elective Project Laboratory OP	E	e	10	0	0	7	*	*	*		*	*	*	*	every semester		
Physical Optics	E	e	5	2	1	0	*		*			*			every spring		
Photonics Laboratory	E	c	4	0	0	3	*		*			*			every spring		
Semiconductor Physics	E	e	3	2	0	0		*				*		*	every fall		
Optical Materials and technologies	E	e	5	3	0	0		*				*			every fall		
Design of non-imaging optics	E	c	3	0	2	0	*		*			*		*	every spring		
Quantum Optics	E	e	5	2	1	0	*		*			*		*	every fall		
Industrial and Biological Applications of Lasers	E	e	3	2	0	0		*	*			*	*	*	every fall		
Optical Spectroscopy in Materials Science	E	e	5	3	0	0	*		*			*		*	every spring		
Quantum Sensing and Quantum Communication	C	e	3	2	0	0	#					#			every spring		
Optical information Processing and Data Storage	E	e	3	2	0	0	*		*			*		*	every spring		
Theoretical Electrodynamics	E	e	5	2	2	0	*		*			*		*	every spring		
The Fundamentals and Applications of Finite Element Modeling	E	c	3	2	0	0	*		*			*		*	every spring		
Spectroscopic Methods in Material Science	E	e	3	2	0	0		*				*	*	*	every fall		
Laser Technology	E	c	3	2	0	0		*				*	*	*	every fall		
Microscopy	E	c	3	2	0	0	*		*			*	*	*	every spring		
Optical Metrology	E	e	3	2	0	0	*		*			*	*	*	every spring		
TOTAL NUMBER OF CREDITS										33	30	30	30	30	33	30	30