Semiconductor Engineering MSc, Responsible: Dr. András Poppe

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

Subject	Responsible	Faculty	Type	Eval	Credit	Hours			Proposed Semester (spring start)				Proposed Semester (fall start)				Prerequisites
						Lect	Prac	Lab	1	2	3	4	1	2	3	4	
FOUNDATIONAL SUBJECTS					**17**												
Modern Physics	Asbóth János	TTK	C	e	**4**	2	1	0	#				#				
Solid State Physics	Makk Péter	TTK	C	e	**4**	2	1	0		#			#				Parallel: Modern Physics
Electronics	Barócsi Attila	TTK	C	c	**4**	2	1	0	#					#			
Microelectronics	Poppe András	VIK	C	c	**5**	2	0	2	#					#			
CORE SUBJECTS					**29**												
Semiconductor Physics	Simon Ferenc	TTK	C	e	**3**	2	0	0			#			#			Solid State Physics
Solid State Electronics	Takács Gábor	VIK	C	c	**4**	2	0	1		#					#		Microelectronics
Semiconductor Metrology	Simon Ferenc	TTK	C	e	**3**	2	0	0			#			#			Solid State Physics
Physics of Advanced Semiconductor Devices	Volk János	TTK	C	e	**3**	2	0	0			#			#			Solid State Physics
Semiconductor Process Technology	Plesz Balázs	VIK	C	e	**5**	3	0	1	#					#			
Packaging, Integration and Reliability	Krammer Olivér	VIK	C	c	**4**	2	0	2		#					#		
Semiconductor Modeling and Simulation	Neumann Péter	VIK	C	c	**3**	0	0	2		#					#		
Semiconductor Characterization Laboratory	Halbritter András	TTK	C	c	**4**	0	0	3		#			#				
ECONOMICS, COMMUNICATION AND INNOVATION					**6**												
Deeptech and Engineering Innovation	Ender Ferenc	VIK	C	c	**3**	2	0	0	#		@			@		#	
ELECTIVE COURSE on Economics, Communication or Management (from the list below)			**E**	**c**	**3**	2	0	0	#	@	@	@	#	@	@	@	
Artificial Intelligence and Ethics	Héder Mihály	GTK	E	c	**3**	2	0	0		*		@	*		@		
Innovation and Green Finance	Bethlendi András	GTK	E	e	**3**	2	0	0	*	@	@	@	*	@	@	@	
Corporate Law	Víg Zoltán	GTK	E	c	**3**	2	0	0		*		@	*		@		
Environmental Evaluation and Risk Management	Csigéné Dr. Nagypál Noémi	GTK	E	e	**3**	0	2	0	*	@	@	@	*	@	@	@	
Strategic management	Kovács Stefan	GTK	E	c	**3**	1	1	0	*	@	@	@	*	@	@	@	
Safety Culture	Dr. Pulay Márk Ágoston	GTK	E	c	**3**	0	2	0	*		@			*		@	
MICROSYSTEMS ENGINEERING SPECIALIZATION (VIK, responsible: Dr. Balázs Plesz)																	
COMPULSORY COURSES					**18**												
Microsystems Modeling 1	Pálovics Péter	VIK	C	e	**4**	1	0	2		#			#				
Microsystems Modeling 2	Pálovics Péter	VIK	C	c	**5**	0	0	4			#		#				
System Level Design	Khafajy Osama Ali Salman	VIK	C	e	**4**	3	0	0		#					#		
System Level Design Laboratory	Khafajy Osama Ali Salman	VIK	C	c	**5**	0	0	4			#				#		
PROFESSIONAL PRACTICE AND THESIS WORK					**40**												
Project Laboratory MSE	Plesz Balázs	VIK	C	c	**10**	0	0	7			#				#		>30 credits
Internship MSE	Ress Sándor	VIK	C	a	**4 weeks**	0	0	0				#			#		
Diploma Thesis 1 MSE	Benedek András	VIK	C	c	**10**	0	0	7				#				#	Project Laboratory
Diploma Thesis 2 MSE	Benedek András	VIK	C	c	**20**	0	0	14				#				#	parallel: Diploma Thesis 1
OPTIONAL COURSES (any BME course)			O		**6**				**6**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	
ELECTIVE COURSES (from the list below, or any elective or compulsory course from the other		VIK	E		**4**				**0**	**4**	**0**	**0**	**4**	**0**	**0**	**0**	
Power Semiconductors	Hantos Gusztáv	VIK	E	e	**4**	2	1	0		*		@	@		*		
Solar Cells and Renewable Energy Sources	Plesz Balázs	VIK	E	e	**4**	4	0	0	@		*			*		@	
Development and Production of Medical Devices	Pardy Tamás	VIK	E	e	**4**	2	2	0		*		@	@		*		
ADVANCED DEVICES AND METROLOGY SPECIALIZATION (TTK, responsible: Dr. András Halbritter)																	
COMPULSORY COURSES					**14**												
Emerging Devices and Architectures for Information T	Makk Péter	TTK	C	c	**3**	2	0	0	@		#			#		@	Parallel: Modern Physics
Quantum Transport in Semiconductor Nanostructures	Halbritter András	TTK	C	c	**5**	2	1	0			#			#		@	Solid State Physics
Advanced Semiconductor Metrology Laboratory	Krafcsik Olga	TTK	C	c	**4**	0	0	3		@	#	@		@	#	@	
Scientific Presentation	Fehér Titusz	TTK	C	c	**2**	0	2	0		#	@			@	#		
PROFESSIONAL PRACTICE AND THESIS WORK					**40**												
Project Laboratory ADM	Halbritter András	TTK	C	c	**10**	0	0	7		@	#			@	#		>30 credits
Internship ADM	Halbritter András	TTK	C	a	**4 weeks**	0	0	0				#			#		
Diploma Thesis 1 ADM	Halbritter András	TTK	C	c	**10**	0	0	7			@	#			@	#	Project Laboratory
Diploma Thesis 2 ADM	Halbritter András	TTK	C	c	**20**	0	0	14				#				#	parallel: Diploma Thesis 1
OPTIONAL COURSES (any BME course)			O		**6**				**3**	**3**	**0**	**0**	**6**	**0**	**0**	**0**	
ELECTIVE COURSES (from the list below, or any elective or compulsory course from the other		TTK	E		**8**				**0**	**8**	**0**	**0**	**8**	**0**	**0**	**0**	
Fundamentals of Photonics	Barócsi Attila	TTK	E	e	**5**	2	1	0		*		@	*		@		
Modern Solid State Physics	Virosztek Attila	TTK	E	e	**7**	3	2	0	@		*			*		@	Solid State Physics
Computational Simulation at Atomic Scale in Solid	Gali Ádám	TTK	E	c	**3**	1	0	1		*		@	*		@		Solid State Physics
Surface Physics	Krafcsik Olga	TTK	E	c	**3**	2	0	0		*		@	*		@		Solid State Physics
Optical Spectroscopy in Materials Science	Bordács Sándor	TTK	E	e	**5**	3	0	0	@		*			*		@	Solid State Physics
Introduction to Data Science	Molontay Roland	TTK	E	e	**7**	3	1	1	*		@			*		@	
Artificial Intelligence in Data Science	Török János	TTK	E	c	**5**	1	0	2		*		@	*		@		
Data-Science-Aided Measurements	Fülöp Gergő	TTK	E	c	**3**	0	0	2	@		*			*		@	Recommend: Artificial Intelligence in Data
The Fundaments and Applications of Finite	Reichardt András	TTK	E	c	**3**	0	0	2	*		@			*		@	
Measurement Control Project Work in LabVIEW	Fülöp Gergő	TTK	E	c	**3**	0	0	2		*		@	*		@		
Real-Time Control and Monitoring of Experimental Systems Using LabVIEW FPGA	Halbritter András	TTK	E	c	**4**	0	0	3	*		@			*		@	
Colloquium Series 1	Dóra Balázs	TTK	E	c	**1**	1	0	0	*		@		*		@		
Colloquium Series 2	Dóra Balázs	TTK	E	c	**1**	1	0	0		*		@		*		@	

TOTAL NUMBER OF CREDITS (MICROSYSTEMS ENGINEERING SPECIALIZATION, VIK)	**30**	**31**	**29**	**30**	**28**	**29**	**30**	**33**	
CHECK	**120**				**120**				
CONTACT HOURS (lecture)	**13**	**10**	**6**	**0**	**7**	**13**	**7**	**2**	
CONTACT HOURS (practice)	**2**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	
CONTACT HOURS (laboratory)	**3**	**10**	**15**	**21**	**9**	**3**	**16**	**21**	
ESTIMATED ELECTIVE AND OPTIONAL CONTACT HOURS	**4**	**3**	**0**	**0**	**3**	**4**	**0**	**0**	
CONTACT HOURS (TOTAL)	**22**	**24**	**21**	**21**	**21**	**21**	**23**	**23**	
NUMBER OF EXAMS	**2**	**3**	**3**	**0**	**3**	**4**	**1**	**0**	
NUMBER OF COURSEWORK GRADES	**4**	**4**	**3**	**2**	**3**	**2**	**5**	**3**	

TOTAL NUMBER OF CREDITS (ADVANCED DEVICES AND METROLOGY SPECIALIZATION, TTK)	**27**	**32**	**31**	**30**	**29**	**31**	**27**	**33**	
CHECK	**120**				**120**				
CONTACT HOURS (lecture)	**13**	**6**	**10**	**0**	**6**	**17**	**4**	**2**	
CONTACT HOURS (practice)	**2**	**3**	**1**	**0**	**2**	**2**	**2**	**0**	
CONTACT HOURS (laboratory)	**3**	**8**	**10**	**21**	**3**	**3**	**15**	**21**	
ESTIMATED ELECTIVE AND OPTIONAL CONTACT HOURS	**2**	**7**	**0**	**0**	**9**	**0**	**0**	**0**	
CONTACT HOURS (TOTAL)	**20**	**24**	**21**	**21**	**20**	**22**	**21**	**23**	
NUMBER OF EXAMS	**2**	**1**	**3**	**0**	**2**	**4**	**0**	**0**	
NUMBER OF COURSEWORK GRADES	**4**	**5**	**4**	**2**	**2**	**4**	**6**	**3**	