Curriculum plan for full-time students in the branch of study Nanoelectronics – Start of semester = summer semester
with type and number of SWS (= class hours per week per semester) and the necessary assessments, the type, hours and organisation of which are described in the module descriptions

Overview of required modules

Module number	Module name	1st semester	2nd semester	3rd semester	4th semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
NES-11 06 01-19.1	Lab Sessions		0/0/0/0/2 PVL PL	0/0/0/0/1 PL		5
NES-11 06 02-14.1	Principles of Dependable Systems		2/2/0/0/0 PVL PL			6
NES-12 10 01-14.1	Fundamentals of Estimation and Detection		2/2/0/0/0 PL			6
NES-12 12 02-19.1	Semiconductor Technology		4/0/0/0/0	2/0/0/0/0 PL		9
NES-12 08 02-14.1	Radio Frequency Integrated Circuits	3/1/0/0/2 PL				7
NES-12 10 03-14.1	Hardware/Software Codesign	2/1/0/0/0 PL				4
NES-12 ASW-14.1	Academic and Scientific Work		*/*/*/*/* *			4
NES-12 PW-14.1	Project Work			1 SWS Projekt 2xPL		10
required elective modules, see following pages						39
					master thesis	29
					defence	1
Credit points (CP)		**30**	**30**	**30**	**30**	**120**

V lecture
Ü exercise
Se seminar
Sp language course
P lab course

PL assessment(s)
PVL pre-exam achievement(s)
CP credit points
* in acc. with student's choice

Required elective modules

Module number	Module name	1st semester	2nd semester	3rd semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
NES-30 GLC-14.1	German Language and Culture		0/0/0/4/0 PL		4
NES-INF-DSE-20-M-SE1	Foundations of Systems Engineering		2/2/0/0/0 PLV PL		5
NES-22-E-NNMHA	Neural Networks and Memristive Hardware Accelerators		2/0/0/0/2 2 SWS Projekt 2xPL		7
NES-12 09 01-14.1	Stochastic Signals and Systems		2/2/0/0/0 PL		6
NES-12 10 05-20.1	Antennas and Radar Systems			4/2/0/0/0 PL	7
NES-12 10 02-14.1	Communications	2/1/0/0/0 PL			3
NES-E-DNNH-23	Deep Neural Network Hardware	2/2/0/0/0 PL			5
NES-11 20 19	Design and Programming of Embedded Multicore Architectures			2/2/0/0/0 PL	6
NES-DSE-14-E14	Embedded Hardware Systems Design	2/2/0/0/0 PL			6
NES-INF-DSE-20-E-SFT	Foundations of Software Fault Tolerance	2/2/0/0/0 PL			6
NES-12 10 08	Introduction to Optical Non-classical Computing: Concepts and Devices	4/2/0/0/0 2xPL			7
NES-13 14 01-14.1	Nanotechnology and Material Science			4/2/0/0/2 3xPL	12
NES-12 08 06	Neuromorphic VLSI Systems	4/2/0/0/0 2xPL			7
NES-E-PD-23	Physical Design			2/0/0/0/1 2xPL	6

Module number	Module name	1st semester	2nd semester	3rd semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
NES-E-LSer-23	Requirements and methodologies for design of integrated circuits from industrial production perspective			4/0/0/0/0 PL	5
NES-E-ResM-23	Ressource Management			2/0/0/0/0 2 SWS Projekt PL	5
NES-12 08 07	VLSI Processor Design			2/2/0/0/2 2xPL	7
NES-11 06 04-14.1	Wireless Sensor Networks			2/0/2/0/0 PL	6
NES-12 06 01-14.1	Materials for the 3D System Integration	2/0/0/0/0 PL	2/0/0/0/1 1 SWS Exkursion 2xPL		7
NES-12 12 03-14.1	Memory Technology	2/0/1/0/0	2/0/1/0/0 PL		7
NES-12 10 20	Communication Networks 3		4/2/0/0/0 2xPL		7
NES-12 12 04-14.1	Electromechanical Networks		2/1/0/0/0 PL		4
NES-12 08 01-20.1	Future Computing Strategies in Nanoelectronic Systems		2/1/0/0/0 PL		4
NES-11 20 20	Hardware Modeling and Simulation		2/2/0/0/0 PL		6
NES-12 10 04-14.1	Hardware/Software Codesign Lab	0/0/0/0/2 PL			4
NES-ET-22-E-ICAND	Innovative Concepts for Active Nanoelectronic Devices		4/1/0/0/1 3xPL		7
NES-12 08 04-14.1	Integrated Circuits for Broadband Optical Communications		3/1/0/0/2 PL		7

Module number	Module name	1st semester	2nd semester	3rd semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
NES-12 10 06-14.1	Integrated Photonic Devices for Communications and Signal Processing		4/0/0/0/2 2xPL		7
INF-DSE-20-E-EHS-L	Lab Embedded Hardware Systems Design		0/0/0/0/4 PL		6
NES-13 14 02-14.1	Molecular Electronics		2/2/0/0/0 PL		6
NES-12 12 05-14.1	Optoelectronics		4/1/0/0/0 2xPL		7
NES-02 04 01	Quantum Mechanics for Nanoelectronics		5/1/0/0/0 PL		7
NES-11 06 07-14.1	Ubiquitous Systems		4/2/0/0/0 PL		7

V lecture
Ü exercise
Se seminar
Sp language course
CP credit points

P lab course
PL assessment(s)
PVL pre-exam achievement(s)

Curriculum plan for full-time students in the branch of study Nanoscience and Nanotechnology – Start of semester = summer semester
with type and number of SWS (= class hours per week per semester) and the necessary assessments, the type, hours and organisation of which are described in the module descriptions

Overview of required modules

Module number	Module name	1st semester	2nd semester	3rd semester	4th semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
Studien- und Prüfungsleistungen an der KU Leuven						60
NES-12 ASW-14.1	Academic and Scientific Work		*/*/*/*/* *			4
NES-12 PW-14.1	Project Work			1 SWS Projekt 2xPL		10
required elective modules, see following pages						16
					master thesis	29
					defence	1
Credit points (CP)		**30**	**30**	**30**	**30**	**120**

V lecture
Ü exercise
Se seminar
Sp language course
P lab course

PL assessment(s)
PVL pre-exam achievement(s)
CP credit points
* in acc. with student's choice

Required elective modules

Module number	Module name	1st semester	2nd semester	3rd semester	CP
		V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	V/Ü/Se/Sp/P	
NES-12 10 05-20.1	Antennas and Radar Systems			4/2/0/0/0 PL	7
NES-12 10 02-14.1	Communications			2/1/0/0/0 PL	3
NES-E-DNNH-23	Deep Neural Network Hardware			2/2/0/0/0 PL	5
NES-11 20 19	Design and Programming of Embedded Multicore Architectures			2/2/0/0/0 PL	6
NES-DSE-14-E14	Embedded Hardware Systems Design			2/2/0/0/0 PL	6
NES-INF-DSE-20-E-SFT	Foundations of Software Fault Tolerance			2/2/0/0/0 PL	6
NES-12 10 08	Introduction to Optical Non-classical Computing: Concepts and Devices			4/2/0/0/0 2xPL	7
NES-12 08 07	VLSI Processor Design			2/2/0/0/2 2xPL	7
NES-12 08 06	Neuromorphic VLSI Systems			4/2/0/0/0 2xPL	7
NES-11 06 04-14.1	Wireless Sensor Networks			2/0/2/0/0 PL	6
NES-E-PD-23	Physical Design			2/0/0/0/1 2xPL	6
NES-E-LSer-23	Requirements and methodologies for design of integrated circuits from industrial production perspective			4/0/0/0/0 PL	5

V lecture
Ü exercise
Se seminar
Sp language course
P lab course

PL assessment(s)
PVL pre-exam achievement(s)
CP credit points