

Course Specifications

Valid in the academic year 2023-2024

Design of Microsystems (E030900)

Course size	(nominal values; actual val	ues may depend on progra	amme)		
Credits 6.0	Study time 180 h				
Course offerings and t	eaching methods in academic	year 2023-2024			
A (semester 1)	Dutch	Gent	lect	ure	
Lecturers in academic	year 2023-2024				
Doutreloigne, Jan TW06			TW06	lecturer-in-charge	
Offered in the following programmes in 2023-2024				crdts	offering
Master of Science	Master of Science in Electrical Engineering (main subject Electronic Circuits and Sys			6	А
Master of Science	in Electrical Engineering			6	А
Teaching languages					
Dutch					
Keywords					
microsystems, int (SoC), System in P IC design	elligent interfaces, smart powe ackage (SiP), System on Board	er technology, System on C (SoB), Multi Chip Module (I	hip MCM),		
Position of the course					
To provide insight To teach methodo system level down Training in the fie	in the structure and operation logies to design a complete mi n to the physical layout level. ld of microsystem design by mo	of a microsystem. icrosystem step by step fro eans of practical projects.	om the		
Contents					
 Structure of a m conditioning, AD Microsystem des Selection of the interfaces, "Syst Appendix: Applic 	icrosystem: Block diagram, Sen and DA converters, Data proce sign methodologies: Selection o integration technology, Design em on Chip" (SoC) design, Proje ations and data sheets	isors, Actuators, Signal issing unit, Output drivers of the implementation typ of integrated intelligent ects	e,		
Initial competences					
Design of analog	circuits and building blocks, VLS	SI technology and design			
Final competences					
1 Analyse the ope 2 Understand the microsystem	ration of building blocks in mic structure and properties of the	crosystems e main building blocks in a	a modern		
3 Design and dim technology on t	ension a complex microsystem he basis of imposed specification	in an advanced smart-po ons	wer IC		
Conditions for credit co	ontract				
Access to this cou	rse unit via a credit contract is	determined after successf	ul competence	s assessment	
Conditions for exam co	ontract				
This course unit ca	annot be taken via an exam con	ntract			
Teaching methods					
Lecture, Practical					

Extra information on the teaching methods

Classroom lectures; Project

Learning materials and price

Extensive set of English PowerPoint slides. Limited syllabus.

References

Course content-related study coaching

Continuous guidance/support, for the theoretical classes as well as for the design project, during the whole semester by the responsible professor and a scientific coworker.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment

Examination methods in case of periodic assessment during the second examination period

Written assessment

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

During examination period: written open-book exam During semester: graded project reports. Second chance: Possible in adapted form Frequency: The student must do 1 big design project (in group) that takes about one month and a half.

Calculation of the examination mark

Evaluation throughout semester as well as during examination period. Special conditions: Non-periodic evaluation: 40% Periodic evaluation: 60%