

## M.Sc. Microelectronics and Chip Design

### *Specialized Elective Modules*

Here is the module list with recommendations based on the selected core module.

For example: if student choose Analog/Mixed-Signal Design as their core module, they are encouraged to choose modules within the specialization of Analog/Mixed-Signal Design to further enhance their skills in this area. Additionally, they may also opt for modules in Digital Design if desired.

Module Nr.	Module Name	Sem.	Credits	Recommendation for Analog/Mixed-Signal Design <b>(A)</b> and/or Digital Design <b>(D)</b>	Chair/ Professorship
<a href="#">EI71013</a>	System Design for the Internet of Things	SoSe	5	D	ESI
<a href="#">EI7384</a>	System-on-Chip Technologies	WiSe	5	D	LIS
<a href="#">EI71095</a>	Multi-Criteria Optimization and Decision Analysis for Embedded Systems Design	WiSe	5	D	LIS
<a href="#">EI71059</a>	Mixed Integer Programming and Graph Algorithms for Engineering Problems	WiSe	5	D	EDA
<a href="#">EI70520</a>	Circuit Design for Security	SoSe	5	D	SEC
<a href="#">CIT4330012</a>	Software for Quantum Computing	SoSe	5	D	CDA
<a href="#">EI71070</a>	Advanced Cryptographic Implementations	SoSe	5	D	SEC
<a href="#">EI71104</a>	Embedded System Design for Machine Learning	WiSe/ SoSe	6	D	EDA
<a href="#">EI7271</a>	Chip Multicore Processors	SoSe	6	D	LIS
<a href="#">EI71073</a>	Quantum Computers and Quantum Secure Communications	SoSe	5	D	SEC
<a href="#">EI71036</a>	Software Architecture for Distributed Embedded Systems	WiSe	5	D	ESI
<a href="#">EI70530</a>	Embedded Systems and Security	WiSe	5	D	SEC
<a href="#">CIT4430001</a>	System Design for High-Frequency and High-Data rate Applications	WiSe	5	A	MNT
<a href="#">CIT433023</a>	Circuit Reliability for AI in Advanced Technologies	SoSe	6	A	AIPRO
<a href="#">CIT443018</a>	Phase Locked Loop / Clocked Circuits	WiSe/ SoSe	5	A	LSE
<a href="#">EI71108</a>	CMOS Analog-to-Digital Converters	SoSe	5	A	LSE
<a href="#">EI7355</a>	Nanosystems	WiSe	5	A	NAN

Module Nr.	Module Name	Sem.	Credits	Recommendation for Analog/Mixed-Signal Design <b>(A)</b> and/or Digital Design <b>(D)</b>	Chair/ Professorship
<a href="#">E171029</a>	Physical Unclonable Functions	WiSe	5	A/D	SEC
<a href="#">CIT433031</a>	Machine Learning for Electronic Design Automation and Manufacturing	WiSe/ SoSe	5	A/D	CDA
<a href="#">CIT4330016</a>	Innovative Computing for AI	SoSe	6	A/D	AIPRO