

## Innovation & Entrepreneurship

(to be combined with a technical major, mandatory for all students)

	I&E	Technical Major
1 <sup>st</sup> Semester	FüS-Entrepreneurship and Innovation Management 6 ECTS	19 ECTS
	Electives 5 ECTS	
2 <sup>nd</sup> Semester	Venture Campus 6 ECTS	17 ECTS
	Ideation Seminar 3 ECTS	
	Summer School 4 ECTS	
3 <sup>rd</sup> Semester	I&E Thesis 6 ECTS	24 ECTS
4 <sup>th</sup> Semester		Master Thesis 30 ECTS

Electives:

The Human Side of Innovation	6 ECTS
Innovation Economics	6 ECTS
Innovation Marketing	6 ECTS
Intellectual Property Management	6 ECTS
Strategic Management	6 ECTS
Strategic Standardisation	6 ECTS
Innovation Policy	6 ECTS
Open Source and IP in the Digital Society	6 ECTS
Strategic Innovation Management	6 ECTS

Although the electives all technically have 6 credits, only 5 credits can be counted towards your degree since the I&E Minor only requires 30 credits in total.

## Human Computer Interaction and Design

(3<sup>rd</sup> and 4<sup>th</sup> semester at TU Berlin)

	Technical Major	
1 <sup>st</sup> Semester	19 ECTS (not at TU Berlin)	
2 <sup>nd</sup> Semester	17 ECTS (not at TU Berlin)	
3 <sup>rd</sup> Semester	Speech and Audio Technology 9 ECTS	Communication Acoustics 6 ECTS
	Electives 9 ECTS	
4 <sup>th</sup> Semester	Master Thesis 30 ECTS	

Electives:

Photogrammetric Computer Vision	9 ECTS
Automatic Image Analysis	6 ECTS
Study Project Quality and Usability	6 ECTS
Biometric Identification	3 ECTS
Introduction to Physiological Computing	6 ECTS

### Internet Technology and Architecture

Technical Major				
1 <sup>st</sup> Semester	Network Architectures – Basics 6 ECTS	Next Generation Networks – Basis 1 9 ECTS	Network Technologies (Small) 6 ECTS	Electives 9 ECTS
2 <sup>nd</sup> Semester	Mobile Services 6 ECTS			
3 <sup>rd</sup> Semester	Electives 24 ECTS			
4 <sup>th</sup> Semester	Master Thesis 30 ECTS			

Electives:

Hot Topics in Operating Systems and Distributed Systems	3 ECTS
Parallel Systems	6 ECTS
Embedded Operating Systems	6 ECTS
Operating System Design	6 ECTS
Operating System Project & Seminar	9 ECTS
CIT 7 – Current topics in IT infrastructures	3 ECTS
Seminar Readings in Database Systems	3 ECTS
Computational Complexity	9 ECTS
IDB: Database Internals & Scalable Data Processing	6 ECTS
IDB-PRA: Implementation of a Database Engine	6 ECTS
Parameterized Algorithmics	6 ECTS
Randomized Algorithms	6 ECTS
Special Topics in Communication Networks and Autonomous Security	3 ECTS
Network Architectures – WirelessLab	9 ECTS
Network Architectures – RouterLab	9 ECTS
Network Architectures – Specialization (big)	9 ECTS
Network Architectures – Specialization (small)	6 ECTS
Network Architectures – Master Project	12 ECTS
Network Architectures – Master Project (small)	6 ECTS
Network Architectures – Seminar	3 ECTS
Network Algorithms	6 ECTS
Digital Communities	6 ECTS
Ad-hoc- and Sensor Networks	6 ECTS
Network Technologies (Medium)	9 ECTS
Performance Evaluation of Computer Communication Systems	6 ECTS
Project in Advanced Network Technologies	6 ECTS
Next Generation Networks & Future Internet Technologies – Project 1	9 ECTS
Next Generation Networks & Future Internet Technologies – Project 2	9 ECTS
Hot Topics in Next Generation Networks and Future Internet Technologies	3 ECTS

### Distributed Systems and Services

Technical Major			
1 <sup>st</sup> Semester	Distributed Algorithms 6 ECTS	Network Architectures - Basics 6 ECTS	Electives 9 ECTS
2 <sup>nd</sup> Semester	CIT 9 - Cloud Computing 6 ECTS	Internet of Services Lab 9 ECTS	
3 <sup>rd</sup> Semester	Electives 24 ECTS		
4 <sup>th</sup> Semester	Master Thesis 30 ECTS		

#### Electives

Network Architectures - Router Lab	9 ECTS
Operating System Design	6 ECTS
Mobile Services	6 ECTS
IDB: Database Internals & Scalable Data Processing	6 ECTS
IDB-PRA: Implementation of a Database Engine	6 ECTS
Advanced Information Management I – Heterogeneous and Distributed Information Systems	6 ECTS
Parallel Systems	6 ECTS
Web Technologies	6 ECTS
Network Architectures - WirelessLab	9 ECTS
Performance Evaluation of Computer Communication Systems	6 ECTS
Digital Communities	6 ECTS
Advanced Information Management III – Scalable Data Analysis and Data Mining	6 ECTS
Hot Topics in Information Management / IMPRO	6 ECTS
IMPRO 3: Big Data Analytics Project	9 ECTS
Sustainable Information Systems Management	6 ECTS
Distributed Algorithms	6 ECTS
Network Architectures – Basics	6 ECTS
CIT 9 – Cloud Computing	6 ECTS
Internet of Services Lab	9 ECTS

### Embedded Systems

Technical Major				
1 <sup>st</sup> Semester	Applied Embedded Systems Project 6 ECTS	Embedded Operating Systems 6 ECTS	Compiler Construction 6 ECTS	Quality Assurance of Embedded Systems 6 ECTS
2 <sup>nd</sup> Semester	Advanced Computer Architectures 6 ECTS		Electives 6 ECTS	
3 <sup>rd</sup> Semester	Analysis and Optimization of Embedded Systems 6 ECTS	Multicore Architectures 6 ECTS		Electives 12 ECTS
4 <sup>th</sup> Semester	Master Thesis 30 ECTS			

#### Electives

Ad-hoc- and Sensor Networks	6 ECTS
Parallel Systems	6 ECTS
Multicore Architectures	6 ECTS
Analysis and Optimization of Embedded Systems	6 ECTS
Operating Systems Project and Seminar	9 ECTS
Recent Advances in Computer Architecture	3 ECTS
Hot Topics in Operating Systems and Distributed Systems	3 ECTS
Computer Arithmetic: Circuit Perspective	6 ECTS
Communication Technologies for Embedded Systems	12 ECTS
Seminar Software Engineering for Embedded Systems	3 ECTS
Embedded Systems Security Labor	6 ECTS
Networked Embedded Systems	6 ECTS

### Security & Privacy

Technical Major				
1 <sup>st</sup> Semester	Computer Security-Specialization Large 9 ECTS (3 ECTS WS, 6 ECTS SS)	Communication Network Security 9 ECTS (3 ECTS WS, 6 ECTS SS)	IT Security Lab: Vulnerability Assessment 6 ECTS	Quality Assurance of Embedded Systems 6 LP
2 <sup>nd</sup> Semester			(Embedded System) Security Labor 6 ECTS	
3 <sup>rd</sup> Semester	Computer Security Project 9 ECTS	Software Security 6 ECTS	Electives 9 ECTS	
4 <sup>th</sup> Semester	Master Thesis 30 ECTS			

#### Electives

Hot Topics in Operating Systems and Distributed Systems	3 ECTS
Embedded Operating Systems	6 ECTS
Operating System Design	6 ECTS
Special Topics in Communication Networks & Autonomous Security	3 ECTS
Computer Security – Seminar	3 ECTS