

# Master IT Engineering - Smart Manufacturing

Start Summer semester

Semester 1	Semester 2	Semester 3
<b>Industrial Internet of Things</b> X 5 ECTS	<b>AI &amp; Optimization for Industrial Applications</b> X 5 ECTS	<b>Masterthesis &amp; Colloquium</b> X 30 ECTS
<b>Systems Engineering</b> X 5 ECTS	<b>Medical Engineering</b> X 5 ECTS	
<b>Smart Manufacturing Seminar</b> T 5 ECTS	<b>Embedded Systems Workshop</b> X 5 ECTS	
<b>Sensors -Technology and Fabrication</b> T 5 ECTS	<b>Smart Manufacturing Project</b> T 5 ECTS	
<b>Modern Production Methods</b> T 5 ECTS	<b>Automation Technology</b> T 5 ECTS	
<b>Robotics</b> T 5 ECTS	<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	
<b>I</b> COMPUTER SCIENCE <b>X</b> INTEGRATIVE COURSE	<b>T</b> ENGINEERING <b>V</b> ELECTIVE COURSE	<b>W</b> ECONOMICS <b>S</b> SOFT SKILLS <b>M</b> MATHEMATICS

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Start Winter semester

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<b>AI &amp; Optimization for Industrial Applications</b> X 5 ECTS	<b>Industrial Internet of Things</b> X 5 ECTS	<b>Masterthesis &amp; Colloquium</b> X 30 ECTS
<b>Medical Engineering</b> X 5 ECTS	<b>Systems Engineering</b> X 5 ECTS	
<b>Embedded Systems Workshop</b> X 5 ECTS	<b>Smart Manufacturing Project</b> T 5 ECTS	
<b>Smart Manufacturing Seminar</b> T 5 ECTS	<b>Sensors -Technology and Fabrication</b> T 5 ECTS	
<b>Automation Technology</b> T 5 ECTS	<b>Modern Production Methods</b> T 5 ECTS	
<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	<b>Robotics</b> T 5 ECTS	
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# Master IT Engineering - Smart Manufacturing

## Start Summer semester (Recommendation for 180 ECTS Incomings)

Semester 1	Semester 2	Semester 3	Semester 4
Fundamental Programming Structures Q 5 ECTS	Discrete Mathematics Q 5 ECTS	Elective Qualification Course Q 5 ECTS	Masterthesis & Colloquium X 30 ECTS
Elective Qualification Course O 5 ECTS	Medical Engineering X 5 ECTS	Robotics X 5 ECTS	
Elective Qualification Course Q 5 ECTS	Embedded Systems Workshop X 5 ECTS	Smart Manufacturing Seminar T 5 ECTS	
Elective Qualification Course Q 5 ECTS	AI & Optimization for Industrial Applications X 5 ECTS	Smart Manufacturing Project T 5 ECTS	
Industrial Internet of Things X 5 ECTS	Automation Technology T 5 ECTS	Sensors -Technology and Fabrication T 5 ECTS	
Systems Engineering X 5 ECTS	<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	Modern Production Methods T 5 ECTS	

**I** COMPUTER SCIENCE    **T** ENGINEERING    **W** ECONOMICS    **M** MATHEMATICS  
**X** INTEGRATIVE COURSE    **V** ELECTIVE COURSE    **S** SOFT SKILLS

Possible qualification courses (by agreement, 4)

Winter semester	Summer semester	Summer and winter semester
Applications of AI Q 5 ECTS	Advanced Programming Features Q 5 ECTS	Programming Project Q 5 ECTS
Engineering Mathematics Q 5 ECTS	Signals and Systems Q 5 ECTS	IIot Project Q 5 ECTS

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## Start Winter semester (Recommendation for 180 ECTS Incomings)

Semester 1	Semester 2	Semester 3	Semester 4
Fundamental Programming Structures Q 5 ECTS	Elective Qualification Course Q 5 ECTS	Elective Qualification Course Q 5 ECTS	Masterthesis & Colloquium X 30 ECTS
Discrete Mathematics O 5 ECTS	Industrial Internet of Things X 5 ECTS	Embedded Systems Workshop X 5 ECTS	
Elective Qualification Course Q 5 ECTS	Robotics X 5 ECTS	AI & Optimization for Industrial Applications X 5 ECTS	
Elective Qualification Course Q 5 ECTS	Systems Engineering X 5 ECTS	Smart Manufacturing Seminar T 5 ECTS	
Medical Engineering X 5 ECTS	Sensors -Technology and Fabrication T 5 ECTS	Smart Manufacturing Project T 5 ECTS	
<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	Modern Production Methods T 5 ECTS	Automation Technology T 5 ECTS	
<b>I</b> COMPUTER SCIENCE <b>X</b> INTEGRATIVE COURSE	<b>T</b> ENGINEERING <b>V</b> ELECTIVE COURSE	<b>W</b> ECONOMICS <b>S</b> SOFT SKILLS	<b>M</b> MATHEMATICS

Possible qualification courses (by agreement, 4

Summer semester	Winter semester	Summer and winter semester
Advanced Programming Features Q 5 ECTS	Applications of AI Q 5 ECTS	Programming Project Q 5 ECTS
Signals and Systems Q 5 ECTS	Engineering Mathematics Q 5 ECTS	IIot Project Q 5 ECTS

# Master IT Engineering - IT Systems and Security

Start Summer semester

Semester 1		Semester 2		Semester 3			
X	Industrial Internet of Things 5 ECTS	X	AI & Optimization for Industrial Applications 5 ECTS	Masterthesis & Colloquium 30 ECTS			
I	IT Seminar 5 ECTS	X	Medical Engineering 5 ECTS				
I	Workshop Cryptography 5 ECTS	X	Embedded Systems Workshop 5 ECTS				
I	Security Engineering 5 ECTS	I	IT Project 5 ECTS				
I	Algorithmics 5 ECTS	I	Distributed Systems 5 ECTS				
T	Robotics 5 ECTS	V	Choice (1 out of 2) Security Management Communication Systems & Reconfigurable Computing 5 ECTS				
I	COMPUTER SCIENCE	T	ENGINEERING	W	ECONOMICS	M	MATHEMATICS
X	INTEGRATIVE COURSE	V	ELECTIVE COURSE	S	SOFT SKILLS		

# Master IT Engineering - IT Systems and Security

Start Winter semester

Semester 1	Semester 2	Semester 3
<b>AI &amp; Optimization for Industrial Applications</b> X 5 ECTS	<b>Industrial Internet of Things</b> X 5 ECTS	<b>Masterthesis &amp; Colloquium</b> X 30 ECTS
<b>Medical Engineering</b> X 5 ECTS	<b>IT Project</b> I 5 ECTS	
<b>Embedded Systems Workshop</b> X 5 ECTS	<b>Workshop Cryptography</b> I 5 ECTS	
<b>IT Seminar</b> I 5 ECTS	<b>Security Engineering</b> I 5 ECTS	
<b>Distributed Systems</b> I 5 ECTS	<b>Algorithmics</b> I 5 ECTS	
<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	<b>Robotics</b> T 5 ECTS	
<b>I</b> COMPUTER SCIENCE <b>X</b> INTEGRATIVE COURSE	<b>T</b> ENGINEERING <b>V</b> ELECTIVE COURSE	<b>W</b> ECONOMICS <b>S</b> SOFT SKILLS <b>M</b> MATHEMATICS

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Elective Qualification Course Q 5 ECTS	Embedded Systems Workshop X 5 ECTS	Algorithmics I 5 ECTS	
Elective Qualification Course Q 5 ECTS	AI & Optimization for Industrial Applications X 5 ECTS	Workshop Cryptography I 5 ECTS	
Industrial Internet of Things X 5 ECTS	Distributed Systems I 5 ECTS	IT Seminar I 5 ECTS	
Security Engineering I 5 ECTS	<b>Choice (1 out of 2)</b> Security Management Communication Systems & Reconfigurable Computing V 5 ECTS	IT Project I 5 ECTS	
<b>I</b> COMPUTER SCIENCE <b>X</b> INTEGRATIVE COURSE	<b>T</b> ENGINEERING <b>V</b> ELECTIVE COURSE	<b>W</b> ECONOMICS <b>S</b> SOFT SKILLS	<b>M</b> MATHEMATICS

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Applications of AI Q 5 ECTS	Advanced Programming Features Q 5 ECTS	Programming Project Q 5 ECTS
Engineering Mathematics Q 5 ECTS	Signals and Systems Q 5 ECTS	IIot Project Q 5 ECTS

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