

# Robotics and Intelligent Systems (RIS) BSc

Matriculation Fall 2021

Program-Specific Modules							Jacobs Track Modules (General Education)							
	Type	Assessment	Period	Status <sup>1</sup>	Sem.	CP		Type	Assessment	Period	Status <sup>1</sup>	Sem.	CP	
<b>Year 1 - CHOICE</b>							<b>Year 1 - CHOICE</b>							
Take the mandatory CHOICE modules listed below							Take the mandatory CHOICE modules listed below							
							Unit: Methods / Skills							
							JTMS-MAT-09 Module: Calculus and Elements of Linear Algebra I							
CH-220	Module: Introduction to Robotics and Intelligent Systems (default minor)			m	2	7.5	JTMS-09	Calculus and Linear Algebra I	Lecture	Written examination	Examination period	m	1	5
CH-220-A	Introduction to Robotics and Intelligent Systems	Lecture				5								
CH-220-B	Intro to RIS - lab	Lab	Written examination			2.5								
CH-231	Module: Algorithms and Data Structures			m	2	7.5								
CH-231-A	Algorithms and Data Structures	Lecture	Written examination			5	JTMS-10	Calculus and Linear Algebra II	Lecture	Written examination	Examination period	m	2	5
							Unit: Language							
							German is default language. Native German speakers take modules in another offered language.							
CH-230	Module: Programming in C and C++ (default minor)			m	1	7.5								
CH-230-A	Programming in C and C++	Lecture	Written examination			2.5								
CH-230-B	Programming in C and C++ Tutorial	Tutorial	Practical assignments			5								
CH-140	Module: Classical Physics			m	1	7.5								
CH-140-A	Classical Physics	Lecture	Written exam			5								
CH-140-B	Classical Mechanics Lab	Lab	Lab report			2.5								
CH-211	Module: General Electrical Engineering I			m	1	7.5								
CH-211-A	General Electrical Engineering I	Lecture	Written exam			5								
CH-211-B	General Electrical Engineering Lab I	Lab	Lab report			2.5								
CH-232	Module: Introduction to Computer Science			m	2	7.5								
CH-232-A	Introduction to Computer Science	Lecture	Written examination			5	JTMS-MAT-12	Probability and Random Processes	Lecture	Written examination	Examination period	m	3	5
<b>Year 2 - CORE</b>							<b>Year 2 - CORE</b>							
Take all CORE modules listed below or replace mandatory elective ("me") modules with suitable CORE modules from other study program							Take all CORE modules listed below or replace mandatory elective ("me") modules with suitable CORE modules from other study program							
							Unit: Methods / Skills							
							JTMS-MAT-12 Module: Probability and Random Processes							
CO-540	Module: Robotics (default minor)			m	3	5	JTMS-12	Probability and Random Processes	Lecture	Written examination	Examination period	m	3	5
CO-540-A	Robotics	Lecture	Written examination			5								
CO-541	Module: Machine Learning			m	4	5								
CO-541-A	Machine Learning	Lecture	Written examination			5								
CO-542	Module: RIS Lab			me	3-4	5								
CO-542-A	RIS Lab 1	Lab	Lab Report			2.5	JTMS-MAT-13	Module: Numerical Methods <sup>3</sup>	Lecture	Written examination	Examination period	me	4	5
CO-542-B	RIS Lab 2	Lab	Lab Report			2.5	JTMS-13	Numerical Methods	Lecture	Written examination	Examination period	m	3	5
							Take one of the two listed mandatory elective methods modules:							
							CO-501 Module: Discrete Mathematics							
CO-543	Module: Automation and Control			me	4	5	CO-501-A	Discrete Mathematics	Lecture	Written examination	Examination period	me	4	5
CO-543-A	Automation	Lecture	Written examination			5								
CO-544	Module: Embedded Systems			me	3	5	Unit: Language							
CO-544-A	Embedded Systems	Lecture/Lab	Project			5	German is default language. Native German speakers take modules in another offered language.							
CO-545	Module: Control Systems			me	3	5								
CO-545-A	Control Systems	Lecture	Written examination			5								
CO-546	Module: Intelligent Systems			me	3	5								
CO-546-A	Computer Vision	Lecture/Lab	Written examination			5								
CO-547	Module: Artificial Intelligence			m	4	5								
CO-547-A	Artificial Intelligence	Lecture	Written examination			5								
CO-548	Module: RIS project			m	4	5								
CO-548-A	RIS project	Project/Lab	Report / Presentation			5								
<b>Year 3 - CAREER</b>							<b>Year 3 - CAREER</b>							
							Unit: Big Questions							
							JTBO-BQ Module: Big Questions							
CA-INT-900	Module: Summer Internship			m	4/5	15	JTBO-BQ	Module: Big Questions	Lecture	Various	Various	me	5/6	10
CA-INT-900-0	Summer Internship	Internship	Report/Business Plan and			15								
CA-RIS-800	Module: Thesis / Seminar IMS			m	6	15								
CA-RIS-800-T	Thesis IMS	Thesis	Thesis and Presentation			12								
CA-RIS-800-S	Seminar IMS	Seminar	Thesis and Presentation			3								
							Unit: Community Impact Project							
							JTCI-CI-950 Module: Community Impact Project							
CA-S-RIS-801	Marine Robotics	Lecture/Lab	Oral examination			5	JTCI-950	Community Impact Project	Project	Project	Examination period	m	5	5
CS-S-RIS-802	Human-Computer Interaction	Lecture	Written examination			5								
CS-S-RIS-803	Optimisation	Lecture	Written examination			5								
CA-S-xxx	Specialization elective (from CS, ECE, Math, IEM study programs) <sup>3</sup>	Various	Various			5								
<b>Total CP</b>							<b>Total CP</b>							
							180							

<sup>1</sup> Status (m = mandatory, me = mandatory elective)

<sup>2</sup> For a full listing of all CHOICE / CORE / CAREER / Jacobs Track modules please consult the CampusNet online catalogue and/or the study program handbooks.

<sup>3</sup> For details please see the program handbook