

Robotics

Real-Life Applications of Intelligent Design



RIGA TECHNICAL
UNIVERSITY

JULY 1–26 | 2019
RIGA | LATVIA

MON	1	9:00–10:00	Introduction into the Robo Camp	RTU main building, 1 Kalku Street (Old City)
		10:00–12:00	Milestones of Latvian. Language Origin, Traditions and Integration Class Cultural Aspects of Historical City Development, Engineering Traditions and Current Situation in Latvia	
TUES	2	09:00–12:00	Field Trip: HansaMatrix HansaMatrix: specializing in product development and design engineering competences, creating excellent, cutting-edge, market-leading products.	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		12:00–13:00	Lunch	
		13:00–16:05	Validation of Idea	
		16:30–18:00	Validation of Idea	
WED	3	10:15–11:50	Introduction into Artificial Intelligence	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–16:05	Introduction into Artificial Intelligence	
THURS	4	10:15–11:50	Introduction to Motion Robotics	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		10:15–11:50	Lunch	
		12:30–14:05	Robot Motion Planning	
		14:30–16:05	Robot Motion Planning: Exercising	
FRI	5	10:15–11:50	Industrial Design (Design Elevator)	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–16:05	Industrial Design (Design Elevator)	
		16.30–18:00	Weekly Assessment: Project idea (Group Presentation)	
SAT	6	10.00–16.00	Explore Latvia – the Hidden Gem of Europe. Trip to Secret Soviet Bunker (Līgatne) + Gauja National Park (Sigulda)	
SUN	7	FREE DAY		
MON	8	10:15–11:50	Modelling & Simulation	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–14:05	Virtual Modelling and Design	
		14:30–16:05	Parametric Modelling. Introduction into Practical Part	
TUES	9	10:15–11:50	Parametric Modelling Process	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–14:05	Practical: Parametric Modelling Tools	
		14:30–16:05	Practical: Constructive Solid Geometry	
WED	10	10:00–11:30	Field Trip: Mass Portal. Mass Portal SIA is a privately held company that designs, manufactures and sells high definition, "open materials" desktop 3D printers	RTU Design Factory, 6 Kipsala Street (theLab)
		11:50–12:30	Lunch	
		12:30–14:05	Introduction with theLAB equipment by RTU Design Factory	
		14:30–16:05	Practical: Dirty Prototyping I - make it tangible! by RTU Design Factory	
		16:05–18:00	Practical: Dirty Prototyping II - presenting the results by RTU Design Factory	
THURS	11	10:00–11:30	Field Trip: UAV FACTORY UAV Factory Ltd. is one of the world's leading developers of fixed wing composite airframes, subsystems and accessories for small fixed wing unmanned aircraft industry. Aircrafts based on our airframes and subsystems are delivered to over 47 countries	RTU Design Factory, 6 Kipsala Street (theLab)
		11:50–12:30	Lunch	
		12:30–16:05	Practical: Design Factory. Group Work: 3D Model Printing by RTU Design Factory	
		17:05–20:00	Group work at RTU Design Factory – theLAB	
FRI	12	10:15–11:50	Practical: Design Factory. Group Work: 3D Model Printing	RTU Design Factory, 6 Kipsala Street
		11:50–12:30	Lunch	
		12:30–16:05	Practical: Design Factory. Group Work: 3D Model Printing by RTU Design Factory	
		16:05–16:30	Weekly Assessment: Modelling skills and the first prototype	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
SAT/SUN	13 14	Explore Latvian Nature: Baltic sea hike / Returning from Baltic sea hike		

MON	15	10:15–11:50	Introduction into Electronics Prototyping	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–14:05	Practical: Simple Breadboard Schematics	
		14:30–16:05	Practical: Electronics and Programming	
TUES	16	10:15–11:50	Robot programming	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–14:05	Practical: Reading Sensors, Control Motors	
		14:30–16:05	Practical: Minisumo Robot Programming and Sumo Robot Competition	
WED	17	10:15–11:50	Soldering Basics	Faculty of Power and Electrical Engineering, 12/1 Azenes Street, room 219
		11:50–12:30	Lunch	
		12:30–14:05	Practical: Soldering and Debugging Electronics Schematics	
		14:30–20:00	Group Work	
THURS	18	10:00–12:00	Field trip: SAF Tehnika SAF Tehnika – world class designer, producer and distributor of digital Microwave Data transmission equipment	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE)
		12:00–12:30	Lunch	
		12:30–14:05	Practical Work: Programming and Testing Robot Electronics	
		14:30–16:05	Group Work	
		16:05–16:30	Weekly Assessment: Programming and soldering skills	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
FRI	19	Explore Baltics: 100 Years of Independence. Trip to Tallinn		
		13:00–15:00	Milrem Robotics (Tallinn) Milrem Robotics primary focus is the manufacture of unmanned ground vehicles, development of robotic warfare solutions and performing concept of operations and doctrine level warfare analysis	
SAT	20	Cultural Differences: Estonia vs Latvia		
SUN	21	FREE DAY		
MON	22	10:15–11:50	Debugging Robot	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
		11:50–12:30	Lunch	
		12:30–14:05	Practical: Improving Robot	
		14:30–16:05	Practical: Improving Robot	
		16:05–20.00	Group work	
TUES	23	10:00–20:00	Preparation of the Final Project Presentation. Group work	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
WED	24	10:00–20:00	Preparation of the Final Project Presentation. Group work	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
THURS	25	10:00–20:00	Preparation of the Final Project Presentation. Group work	RTU Students Campus, Kipsala. 1 Paula Valdena (LAB HOUSE), room 105
FRI	26	13:00–15:00	Group Work Presentations. Final Project	1 Kronvalda Boulevard
		15:00–15:30	Course completion ceremony	
		16:00	Snacks and discussion	

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Foreign Students Foundation and Short-Term Courses Unit, Project Coordinator

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