

People and Robot for Sustainable Work - MU – TU-Wien collaboration–

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1 st year	Total credits 2 nd year
Technical courses (TC)	45	40-50	10-20
Specialization courses (SC)	15		
Innovation & Entrepreneurship courses (I&E)	30	10-20	10-20
Master thesis (MT)	30	0	30
Tot	120	60	60

Entry university MU – exit university TU-Wien

1st year MU

I&E: 18

TC: 42 (6 SP)

Draft plan:

Type of modules	MU courses	ECTS	Semester	Total credits
TC	MRB001 Data Analytics	3	1	30 ¹ (15 sem.1 15 sem.2)
	2 Robotics: Mechanics, Modelling and Simulation ³	6	1	
	MRD001 Digital Control Systems	5	1	
	MRD002 Sensors and Measurements	3	1	
	MRE001 Artificial vision	4	1	
	MRA002 Electromechanical Drives	3	2	
	MRB002 Deep Learning	3	1	
	MRD004 Internet of Things Technologies	3	2	
	MRD005 Signal Processing	6	2	
SC	MRE002 Perception	6	2	12 (6 sem.1 6 sem.2)
	MRC002 Robot Programming	6	1	
	MRC003 Mobile Robotics	3	2	
I&E	MRC004 Robotic Control Systems	3	2	18 (9 sem.1 9-12 sem.2)
	MRF001 Professional Placement I ⁴	3	1	
	MEC101 Innovation management ⁵	3	1	
	MRF002 Professional Placement II ³	3	2	
	MED104 Alternative project management approaches ⁴	6	2	

	Integrated project activity ⁶	6 ⁷	1, 2	
I&E	Centrally organized summer school	5	2	5 (5 sem.2)

2nd year TU-Wien

I&E: 12

TC: 18 (9 SP)

MT: 30 ECTS

Type of modules	TU-Wien courses	ECTS	Semester	Total credits
TC	330.289 Cobot Studio @Pilot Factory for Industry 4.0	2	1	9 (7 sem.1 2 sem.2)
	307.440 Ecodesign, Sustainable Product Development	3	1	
	330.291 Digital Simulation of Ergonomics and Robotics (DSER)	2	1	
	307.490 Product Lifecycle Management (VO)	2	2	
SC	330.265 Assistance Systems in Manufacturing 1	3	1	6 (3 sem.1 3 sem.2)
	330.273 Assistance Systems in Manufacturing 2	3	2	
I&E	330.258 Innovation Theory	3	1	15 (9 sem.1 6 sem.2)
	330.287 Technology, Work and Organization	3	1	
	??? Robot Challenge ⁸	9	1, 2	
MT	Master thesis: focus on People and Robots for Sustainable Work	30	1, 2	30 ⁹ (10 sem.1 20 sem.2)

ECTS Summary by modules and semesters

Type of modules	1 st sem.	2 nd sem.	3 rd sem.	4 th sem.	Total credits
TC	15	15	7	2	39
SC	6	6	3	3	18
I&E	9	9	9	6	33
MT			10 ⁸	20 ⁸	30
TOTALS	30	30	29	31	120

People and Robot for Sustainable Work

- Study plan -

- SUPSI - TUWien collaboration-

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Technical courses (TC)	45	40-50	10-20
Specialization courses (SC)	15		
Innovation & entrepreneurship courses (I&E)	30	10-20	10-20
Master thesis (MT)	30	0	30
Tot	120	60	60

Entry university SUPSI – exit university TUWien

1st year SUPSI

Draft plan:

Type of modules	SUPSI courses	ECTS	Semester	Total credits
TC	TSM Industrial control	3	2	33 (18 sem 1 15 sem 2)
	TSM PredContr: Model Predictive Control (ZH, Tue afternoon)	3	1	
	FTP OrdDiff: Ordinary Differential Equations and Dynamical Systems	3	1	
	FTP ModSim Modelling Simulation and Optimization	3	2	
	TSM IntAuto: Integrated Automation (ZH, Mon Afternoon)	3	2	
	FTP AppStat: Applied Statistics and Data Analysis	3	2	
	CM IntSust: Integrated Sustainable Management of Production Systems	3	1	
	FTP MultiASys: Multi-agent systems	3	2	
	PMS: Project on Human Robot collaboration*	9	1	

SC	PSM MS_AdvRob: Advanced robotics**	6	2	9 (3 sem 1, 6 sem2)
	TSM AdvRobot: Advanced Robotics (ZH, Tue morning)	3	1	
I&E	CM InnoLEAN: Innovation and Lean	3	1	13 (8 sem1 5 sem2)
	PSM_ Project on Robotics and Automation*	10 (5+5)	1, 2	

*PSM modules: they are example of possible individual projects to be included in this curriculum. Similar topics could be identified depending on the students' interest and opportunities in the university labs or companies collaborating with the university.

** Lab offered in Lugano to a class with group assignment

I&E	Centrally organized summer school	5	2	5 (5 sem 2)
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2nd year TUWien

Type of modules	TUWien courses	ECTS	Semester	Total credits
TC	330.265 Assistance Systems in Manufacturing 1	3	1 (WS)	12 (7 sem 1, 5 sem 2)
	330.273 Assistance Systems in Manufacturing 2	3	2 (SS)	
	307.490 Product Lifecycle Management (VO)	2	2 (SS)	
	330.289 Cobot Studio @Pilot Factory for Industry 4.0	2	1 (WS)	
	330.291 Digital Simulation of Ergonomics and Robotics (DSER)	2	1 (WS)	
SC	376.054 Machine Vision and Cognitive Robotics	6	1 (WS)	6 (6 sem1)
I&E	330.258 Innovation Theory	3	1 (WS)	12 (12 sem 1)
	NEW: Robot Challenge	9	1 (WS)	
MT	Master thesis: focus on People and Robots for Sustainable Work	30	2	30

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	18	15	7	5	45
SC	3	6	6		15

I&E	8	10	12		30
MT				30	30
Tot	29	31	25	35	120