

Programme Data Science and AI for competitive manufacturing

– Study plan –

ECN- Trento 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)	40-48	40-50	10-20
Specialization courses (SC)	12-20		
Innovation & entrepreneurship courses (I&E)	30	10-20	10-20
Master thesis (MT)	30	0	30
Tot	120	60	60

Entry university ECN – exit University of Trento

1st year ECN

Draft plan:

Type of modules	ECN courses	ECTS	Semester	Total credits
TC	Modelling of Complex Systems (I)	4	1	30
	Introduction to Optimization Methods	4	1	
	Production Management	5	1	
	Discrete-event Simulation	5	1	
	Systems Engineering	4	2	
	Statistics and Data Analysis	4	2	
	Stochastic and Multi-Agent Simulation	4	2	
SC	Systems Engineering	4	2	10
	Management Systems and Socio-Organizational Aspects for Ind. Eng.	4	2	
	Conference	2	2	
I&E	Enterprise Modelling 1	5	2	15

Other	Financial and Economic Aspects for Ind. Engineering	5	1	8
	Enterprise Management*	5	2	
	Mandatory language course	4	1	
	Mandatory language course	4	2	

I&E	Centrally organized summer school	5	2	5
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2nd year Trento

Type of modules	Trento courses	ECTS	Semester	Total credits
TC	145062 Machine Learning	6	1	12 (2 courses among 4)
	145453 Data Mining	6	1	
	145635 High-throughput Computing for Data Science	6	1	
	145937 Introduction to Computer and Network security	6	1	
SC	145874 Robot planning and its application	6	1	6 (1 course among 4)
	155020 Multisensory Interactive Systems	6	1	
	145072 Requirements Engineering	6	1	
	145810 Service Design and Engineering	6	1	
I&E	145623 Innovation and Entrepreneurship Studies in ICT (core)	6	1	12
	145322 Project Course	6	1	
MT	Thesis (Including Internship)(core)	30	2	30

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	18	12	12		48
SC	0	10	6		16
I&E	5	8+5	12		30
MT				30	30
Other	4	4			8

Programme Data Science and AI for competitive manufacturing

– Study plan –

SUPSI- Trento 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)	40-48	40-50	10-20
Specialization courses (SC)	12-20		
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 of Trento

1st year SUPSI

Draft plan:

Type of modules	SUPSI courses	ECTS	Semester	Total credits
TC	Advanced Algorithms and Data Structures (FTP_AdvAlgDS)	3	1	30
	Multi-Agent Systems (FTP_MultiASys, 2021-2022)	3	2	
	Applied Statistics and Data Analysis (FTP_AppStat, 2021-2022)	3	2	
	Data Analysis and Classification (TSM_DataAnaCla)	3	1	
	Advanced Data Management – non standard database systems (TSM_AdvDataMgmt)	3	1	
	Analysis of Sequential Data (TSM_AnSeqDa)	3	1	
	Virtual environments (MP_DCAPVE)	9	2	

	Quality and Risk Management (CM_QRM)	3	2	
SC	Deep Learning Lab	3	1	12
	<u>Uncertain Reasoning and Data Mining (MC URDM)</u>	<u>6</u>	<u>1</u>	
	<u>Machine Learning in Computer Vision (TSM_CompVis, 2021-2022)</u>	3	1	
I&E	Project in data science applied to manufact.	7	1-2	18
	Innovation and Lean (CM_InnoLEAN)	3	1	
	Centrally organized summer school	5	2	
	Privacy and Law (CM_PrivLaw)	3	2	

2nd year Trento

Type of modules	Trento courses	ECTS	Semester	Total credits
TC	145683 Data Visualization Lab	6	1	12 (2 courses among 4)
	145689 Knowledge and Data Integration	6	1	
	145635 High-throughput Computing for Data Science	6	1	
SC	140472 Distributed Systems for measurement and automation	6	1	6 (1 course among 4)
	145810 Service Design and Engineering	6	1	
I&E	145623 Innovation and Entrepreneurship Studies in ICT (core)	6	1	12
	145322 Project Course	6	1	
MT				30
	Thesis, including internship (core)	30	2	

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	12	18	Max 18		48
SC	12	0	Max 8		16
I&E	6	12	12		30

MT	0	0	0	30	30
Other					
Total	30	30			