

MSc “Additive Manufacturing for a full flexibility” programme

- Study plans –

This document presents the general syllabi of all the MSc double degrees available within the EIT Manufacturing “Additive Manufacturing for a full flexibility” programme. Please note these are the basic versions of the study plans, in order to provide a better understanding of the programme and the differences among the several available combinations within the programme. Considering universities continuously develop their education offer, some of the courses could result to be updated, changed or replaced along the years. Once enrolled, the student will be supported by a local programme coordinator to define the final study plan accordingly to the general structure of the EIT Manufacturing Master programmes.

General structure of the EITM 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

Please scroll down this document to find the different syllabi of the following available combinations.

Available entry and exit combinations from November 2022 on

ENTRY university	EXIT university
Aalto University (Aalto)	TU Wien
University College Dublin (UCD)	Aalto University (Aalto)
SUPSI	TU Wien
University College Dublin (UCD)	SUPSI
University College Dublin (UCD)	TU Wien
Politecnico di Milano (POLIMI)	Aalto University (Aalto)
Politecnico di Milano (POLIMI)	TU Wien
Politecnico di Milano (POLIMI)	SUPSI



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- Study plan -

- Aalto - TUWien collaboration -

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Entry university Aalto – exit university TUWien

Entry year Aalto 2021-2022

Type of modules	Course code and name at Aalto	ECTS	Semester	Total credits	
TC & SC	<i>Compulsory courses</i>			15 ECTS	
	MEC-E1003 Machine Design Project	5	1		
	MEC-E7006 Advanced Manufacturing	5	2		
		MEC-E7009 Design for Additive Manufacturing	5	2	25 ECTS
	<i>Elective courses (select at least 25 ECTS)</i>				
	MEC-E1080 Production Engineering	5	1		
	MEC-E1090 Quality Management and Metrology	5	1		
	MEC-E6002 Welding Technology and Design	5	2		
	MEC-E7001 Production Systems Modeling	5	2		
	MEC-E7002 Manufacturing Methods I	5	2		
	MEC-E7003 Manufacturing Methods II	5	2		
	MEC-E7005 Advanced Casting Technology	5	2		
	CS-E4710 Machine Learning: Supervised Methods	5	1		
	CS-E4800 Artificial Intelligence	5	2		
	CS-E4850 Computer Vision	5	1		



	CS-E5340 Introduction to Industrial Internet (TBC)	5	2	
	ELEC-E5710 Sensors and Measurement Methods	5	2	
	ELEC-E8105 Non-linear Filtering and Parameter Estimation	5	2	
	ELEC-E8113 Information Systems in Industry	5	1	
	ELEC-E8125 Reinforcement learning	5	1	
	MS-E2112 Multivariate Statistical Analysis	5	2	
	37E10500 Project Management and Consulting Practice	6	1	
	TU-E2013 Service Operations Management	5	2	
	TU-E2020 Advanced Operations Management	4	1	
	ELEC-E8102 Distributed and Intelligent Automation Systems	5	1	
	ELEC-E8110 Automation Software Synthesis and Analysis	5	2	
	ELEC-E8111 Autonomous Mobile Robots	5	2	
	ELEC-E8115 Micro- and Nano Robotics	5	2	
	ELEC-E8116 Model-Based Control Systems	5	1	
	ELEC-E8126 Robotic manipulation	5	2	
Other	LC-XXXX Compulsory foreign language course*	3	any	
I&E	25E50000 Venture Ideation	6	1	20 ECTS
	TU-E4100 Startup Experience	9	1 or 2	
	Centrally organized summer school	5	2	

*On top of the mandatory 120 ECTS of the programme

Exit year at TUWien

Type of modules	TUWien courses	ECTS	Semester	Total credits
TC	311.136 Basics of Laser Technology	3	1 (WS)	12 (7 sem1, 5 sem2)
	317.540 Isogeometric Analysis	5	2 (SS)	
	317.508 Composites Engineering	4	1 (WS)	
SC	308.865 Additive Manufacturing Technologies	2	2 (SS)	5 (3 sem1, 2 sem2)
	308.106 Biocompatible Materials	3	1 (WS)	
I&E	330.258 Innovation Theory	3	1 (WS)	13 (13 sem1, 0 sem2)
	164.287 European Union - Institutions, Policies and Future Challenges	2	1 (WS)	



	330.261 End-of-Life Management	3	1 (WS)	
	330.287 Technology, Work and Organization	3	1 (WS)	
	311.170 Mechanical behaviour of 3D printed components: Opportunities and challenges in future design	2	1 (WS)	
MT**	Master thesis: Focus on Additive Manufacturing for full flexibility	30	2 (SS)	30

Recap

Type of modules	ECTS in S1*	ECTS in S2*	ECTS in S3	ECTS in S4	Total credits
TC	5 – 33	10 – 38	7	5	45
SC			3	2	15
I&E	6 – 15	5 – 14	13	0	30
MT				30	30
Tot	11 – 48	15 - 52	23	37	120

*The workload per semester depends on the student's individual choice of elective courses. In this table, the compulsory language course is included in the credits of the technical major (TC and SC). The summer school is included in the I&E credits. The total credits for the entry year should add up to at least 60.

** in collaboration with entry university and according to both entry and exit universities local and legal requirements for graduation process

Additive Manufacturing for Full Flexibility

- Study plan –

UCD - Aalto collaboration

General structure of the EITM 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 UCD– exit university Aalto

1st year UCD

Draft plan:

Type of modules	UCD courses	ECTS	Semester	Total credits
TC	Computational Continuum Mechanics II (core)	5	1	30
	Manufacturing Engineering II (Core)	5	1	
	Computational Continuum Mechanics I (core)	5	1	
	Advanced Polymer Engineering (core)	5	2	
	Advanced Metals Processing (Core)	5	2	
	Eng. Decision Support Systems (core)	5	2	
SC	Medical Device Design (core)	5	1	10
	Mechanical Engineering Design I (core)	5	2	
I&E	Mechanical Engineering Design II (core)	5	1	15
	Technical Communication (core)	5	1	
	Professional Eng. (Finance) (option)	5	2	
	Professional Engineering (Management) (option)	5	2	

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

Type of modules	Aalto courses	ECTS	Semester	Total credits
TC	MEC-E1003 Machine Design Project (core)	5	1	15
	MEC-E1080 Production Engineering (option)	5	1	
	37E10500 Project Management and Consulting Practice (core)	6	1	
	TU-E2020 Advanced Operations Management (option)	4	1	
SC	ELEC-E8113 Information Systems in Industry	5	1	5
I&E	25E50000 Venture Ideation (core)	6	1	10
	CS-E5140 Global Business in the Digital Age (core)	4	1	
MT	Master thesis	30	2	30

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	15	15	15		45
SC	5	5	5		15
I&E	10	5+5	10		30
MT				30	