Additive Manufacturing

- Study plan –
- Aalto - TUWien collaboration–

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 Aalto – exit university TUWien

Entry year Aalto 2021-2022

Type of modules	Course code and name at Aalto	ECTS	Semes-ter	Total credits
TC & SC	*Compulsory courses*			15 ECTS
	MEC-E1003 Machine Design Project	5	1	
	MEC-E7006 Advanced Manufacturing	5	2	
	MEC-E7009 Design for Additive Manufacturing	5	2	
	Elective courses (select at least 25 ECTS)			25 ECTS
	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	

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	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	3 ECTS
I&E	25E50000 Venture Ideation	6	1	20 ECTS
	TU-E4100 Startup Experience	9	1 or 2	
	Centrally organized summer school	5	2	

Exit year at TUWien

Type of modules	TUWien courses	ECTS	Semes-ter	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.

Additive Manufacturing for Full Flexibility
- Study plan –
- Aalto - UCD collaboration–

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 Aalto – exit university UCD

Entry year Aalto 2021-2022

Type of modules	Course code and name at Aalto	ECTS	Semes-ter	Total credits
TC & SC	*Compulsory courses*			15 ECTS
	MEC-E1003 Machine Design Project	5	1	
	MEC-E7006 Advanced Manufacturing	5	2	
	MEC-E7009 Design for Additive Manufacturing	5	2	
	Elective courses (select at least 25 ECTS)			25 ECTS
	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	

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	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	

Additive Manufacturing for Full Flexibility
• Study plan –
UCD - SUPSI collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 SUPSI

1st year UCD

Draft plan:

Type of modules	UCD courses	ECTS	Semes-ter	Total credits
TC	Computational Continuum Mechanics II	5	1	30 (15 sem 1 15 sem 2)
	Manufacturing Engineering II	5	1	
	Computational Continuum Mechanics I	5	1	
	Advanced Polymer Engineering	5	2	
	Advanced Metals Processing	5	2	
	Operations Management	5	2	
SC	Medical Device Design	5	1	10 (5 sem 1 5 sem 2)
	Mechanical Engineering Design I	5	2	
I&E	Mechanical Engineering Design II	5	1	15 (10 sem 1 5 sem 2)
	Technical Communication	5	1	
	Professional Eng. (Finance) (option)	5	2	
	Professional Engineering (Management) (option)	5	2	

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*PMS module: this is an example of possible individual project 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 for a class of students with group assignments

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

2nd year SUPSI

Type of modules	SUPSI courses	ECTS	Semes-ter	Total credits
TC	FTP_PredMod_Predictive_Modelling (ZH, Wed afternoon)	3	1	15 (15 sem 1)
	FTP_OrdDiff: Ordinary Differential Equations and Dynamical Systems	3	1	
	FTP_Optimiz_B: Optimization (ZH, Wed morning)	3	1	
	CM_IntSust: Integrated Sustainable Management of Production Systems	3	1	
	TSM_Materials Selection and Design	3	1	
SC	MS_TPEMAM: Seminar – Technologies, Processes and Equipment for Metal based Additive Manufacturing**	6 (4+2)	1,2	6 (4 sem1, 2 sem2)
I&E	CM_InnoLEAN: Innovation and Lean	3	1	10 (7 sem1, 3 sem2)
	PSM Project on Additive Manufacturing*	4	1	
	CM_QRM: Quality and Risks management	3	2	
MT	Master thesis: Focus on Additive Manufacturing for full flexibility	30	2	30 (30 sem2)

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	15	15	15	0	**45**
SC	5	5	4	2	**16**
I&E	10	5+5	7	3	**30**
MT				30	**30**

Tot	30	30	26	35	**121**

Additive Manufacturing for Full Flexibility
- Study plan –

UCD - TUW collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 TUW

1st year UCD

Draft plan:

Type of modules	UCD courses	ECTS	Semes-ter	Total credits
TC	Computational Continuum Mechanics II	5	1	30 (15 sem 1 15 sem 2)
	Manufacturing Engineering II	5	1	
	Computational Continuum Mechanics I	5	1	
	Advanced Polymer Engineering	5	2	
	Advanced Metals Processing	5	2	
	Operations Management	5	2	
SC	Medical Device Design	5	1	10 (5 sem 1 5 sem 2)
	Mechanical Engineering Design I	5	2	
I&E	Mechanical Engineering Design II	5	1	15 (10 sem 1 5 sem 2)
	Technical Communication	5	1	
	Professional Eng. (Finance) (option)	5	2	
	Professional Engineering (Management) (option)	5	2	

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

2nd year TUW

Type of modules	TUW courses	ECTS	Semes-ter	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	30 (30 sem2)

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	15	15	7	5	**42**
SC	5	5	3	2	**15**
I&E	10	5+**5 (Summer School)**	13	0	**33**
MT				30	**30**

Tot	30	30			

Additive Manufacturing for Full Flexibility
• Study plan –
UCD - Aalto collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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	Semes-ter	Total credits
TC				
	Computational Continuum Mechanics II (core)	5	1	
	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	
	Mechanical Engineering Design I (core)	5	2	
I&E	Mechanical Engineering Design II (core)	5	1	
	Technical Communication (core)	5	1	
	Professional Eng. (Finance) (option)	5	2	

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	Professional Engineering (Management) (option)	5	2	

I&E	Centrally organized summer school	5	2	

2nd year Aalto

Type of modules	Aalto courses	ECTS	Semes-ter	Total credits
TC	MEC-E1003 Machine Design Project (core)	5	1	
	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	
I&E	25E50000 Venture Ideation (core)	6	1	
	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	

Additive Manufacturing for Full Flexibility
- Study plan –
POLIMI - Aalto collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 POLIMI – exit university Aalto

1st year POLIMI

Draft plan:

Type of modules	POLIMI courses	ECTS	Semes-ter	Total credits
TC	Advanced manufacturing processes	10	1	36
	Applied metallurgy	6	1	
	Control and actuating devices for mechanical systems	9	1	
	Measurements	5	2	
	Machine design	6	2	
SC	Additive Manufacturing	8	1	8
I&E	Design & management of production systems	10	2	16
	Managing technology disruption	6	2	

I&E	Centrally organized summer school	5	2	5

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2nd year Aalto

Type of modules	Course code and name at Aalto	ECTS	Semes-ter	Total credits
TC & SC	*Compulsory courses*			10 ECTS
	MEC-E1003 Machine Design Project	5	1	
	MEC-E1060 Machine Design	5	1	
	Elective courses (select at least 10 ECTS)			10 ECTS
	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	3 ECTS
I&E	TU-E4100 Startup Experince	9	1	14 ECTS
	Centrally organized summer school	5	2	

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC			10		
SC					
I&E			14		
Other			3		
MT				30	

Additive Manufacturing for Full Flexibility
- Study plan –
POLIMI – TU Wien collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 POLIMI – exit university TU Wien

1st year POLIMI

Draft plan:

Type of modules	POLIMI courses	ECTS	Semes-ter	Total credits
TC	Advanced manufacturing processes	10	1	36 (25 sem 1, 11 sem2)
	Applied metallurgy	6	1	
	Control and actuating devices for mechanical systems	9	1	
	Measurements	5	2	
	Machine design	6	2	
SC	Additive Manufacturing	8	1	8 (8 sem1)
I&E	Design & management of production systems	10	2	16 (16 sem 2)
	Managing technology disruption	6	2	

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

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2nd year TU Wien

Type of modules	TUWien courses	ECTS	Semes-ter	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	9	24	7	5	**45**
SC	7	3	3	2	**15**
I&E	12	5	13	0	**30**
MT				30	**30**
Tot	28	32	23	37	**120**

Additive Manufacturing for Full Flexibility
- Study plan –
POLIMI – UCD collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 POLIMI – exit university UCD

1st year POLIMI

Draft plan:

Type of modules	POLIMI courses	ECTS	Semes-ter	Total credits
TC	Advanced manufacturing processes	10	1	36 (25 sem 1, 11 sem2)
	Applied metallurgy	6	1	
	Control and actuating devices for mechanical systems	9	1	
	Measurements	5	2	
	Machine design	6	2	
SC	Additive Manufacturing	8	1	8 (8 sem1)
I&E	Design & management of production systems	10	2	16 (16 sem 2)
	Managing technology disruption	6	2	

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

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2nd year UCD

I&E: 10
TC: 20 (5 SP)
MT: 30 ECTS

Type of modules	UDC courses	ECTS	Semes-ter	Total credits
TC	Computational Continuum Mechanics II	5	1	15
	Manufacturing Engineering II	5	1	
	Advanced Metals & Materials Processing	5	1	
SC	Medical Device Design	5	1	5
I&E	Mechanical Engineering Design II	5	1	10
	Entrepreneurship in Engineering	5	1	
MT	Master thesis: focus on Additive Manufacturing for Full Flexibility	30	2	30

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	6	24	15		**45**
SC	7	3	5		**15**
I&E	12	8	10		**30**
MT				30	**30**
Tot	25	35	30	30	**120**

Additive Manufacturing for Full Flexibility
- Study plan –

SUPSI - UCD collaboration

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 SUPSI – exit university UDC

1st year SUPSI

Draft plan:

Type of modules	SUPSI courses	ECTS	Semes-ter	Total credits
TC	TSM_Materials Selection and Design	3	1	30 (6 sem 1 24 sem 2)
	FTP_OrdDiff: Ordinary Differential Equations and Dynamical Systems	3	1	
	FTP_ModSim Modelling Simulation and Optimization	3	2	
	TSM_CSM: Computational Structural Mechanics (ZH, Mon Morning)	3	2	
	TSM_AdvMech: Advanced Structural Mechanics (ZH, Mon afternoon)	3	2	
	FTP_AppStat: Applied Statistics and Data Analysis	3	2	
	FTP_MultiASys: Multi-agent systems	3	2	
	MP_CAE: Computer Aided engineering**	9	2	
SC	MS_TPEMAM: Seminar – Technologies, Processes and Equipment for Metal based Additive Manufacturing**	7 (4+3)	1	10 (7 sem1, 3 sem2)
	TSM_Structural and Vibration	3	1	

I&E	CM_InnoLEAN: Innovation and Lean	3	1	15 (12 sem1, 3 sem2)
	PSM Project on Additive Manufacturing*	9	1	
	CM_QRM: Quality and Risks management	3	2	

*PMS module: this is an example of possible individual project 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 for a class of students with group assignments

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

2nd year UDC

I&E: 10
TC: 20 (5 SP)
MT: 30 ECTS

Type of modules	UDC courses	ECTS	Semes-ter	Total credits
TC	Computational Continuum Mechanics II	5	1	15
	Manufacturing Engineering II	5	1	
	Advanced Metals & Materials Processing	5	1	
SC	Medical Device Design	5	1	5
I&E	Mechanical Engineering Design II	5	1	10
	Technical Communication	5	1	
MT	Master thesis: focus on Additive Manufacturing for Full Flexibility	30	2	30

Recap

Type of modules	ECTS in S1	ECTS in S2	ECTS in S3	ECTS in S4	Total credits
TC	6	24	15		**45**
SC	7	3	5		**15**
I&E	12	8	10		**30**
MT				30	**30**
Tot	25	35	30	30	**120**

Additive Manufacturing

- Study plan –
- SUPSI TUWien collaboration–

General structure of the EIT-M Master Programme

Type of modules	Total credits for EIT-M Master	Total credits 1st year	Total credits 2nd 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 SUPSI – exit university TUWien

1st year SUPSI

Draft plan:

Type of modules	SUPSI courses	ECTS	Semes-ter	Total credits
TC	TSM_Materials Selection and Design	3	1	33 (9 sem 1 24 sem 2)
	FTP_OrdDiff: Ordinary Differential Equations and Dynamical Systems	3	1	
	FTP_ModSim Modelling Simulation and Optimization	3	2	
	TSM_CSM: Computational Structural Mechanics (ZH, Mon Morning)	3	2	
	TSM_AdvMech: Advanced Structural Mechanics (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	
	MP_CAE: Computer Aided engineering**	9	2	

SC	MS_TPEMAM: Seminar – Technologies, Processes and Equipment for Metal based Additive Manufacturing**	7 (4+3)	1,2	10 (7 sem1, 3 sem2)
	TSM_Structural and Vibration	3	1	
I&E	CM_InnoLEAN: Innovation and Lean	3	1	12 (12 sem1)
	PSM Project on Additive Manufacturing*	9	1	

*PMS module: this is an example of possible individual project 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 for a class of students with group assignments

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

2nd year TUWien

Type of modules	TUWien courses	ECTS	Semes-ter	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	9	24	7	5	**45**
SC	7	3	3	2	**15**
I&E	12	5	13	0	**30**
MT				30	**30**
Tot	28	32	23	37	**120**