

# Courses 2021-2022 master MW track MSE-W

## Core courses 10 ECTS obligatory

Code	Vak naam/Course name	Timeslot	SP	Quartile
1CM160	Manufacturing Technology	B/E	5	Q1-Q3
4CM70	Integrated Systems Design	E	5	Q2

One course from 4 of the following 5 pillars, 20 ECTS, where selecting a course from the pillar Machine design and control is obligatory:

Machine design and control				
4CM00	Control Engineering	C/E	5	Q1-Q3
4UM00	Microfabrication methods	B/B	5	Q1-Q4

Factory design and control				
1CM10	Modeling & analysis of manufacturing systems	D	5	Q2
4DM40	Modelling and control of manufacturing networks	A	5	Q4

Maintenance design and control				
1CM120	Advanced Maintenance and Service	D	5	Q1
4MM50	Fracture mechanics – theory and application	C	5	Q4

Supply network design and control				
1CM100	Multi Echelon inventory management	C	5	Q4
1CM140	Design of Operations Planning and control systems	B2	5	Q4

AI design and control				
1BM110	Data analytics for business intelligence	C	5	Q3
1BM120	Computational intelligence	E	5	Q4

## Specialization courses, 15 ECTS from assigned section

### Section MSE-CST

Code	Vak naam/Course name	Timeslot	SP
<b>Kwart 1/Quartile 1</b>			
4CM00	Control Engineering	C	5
4CM10	System theory for control	B	5
<b>Kwart 2/Quartile 2</b>			
4CM60	Advanced motion control	B	5
<b>Kwart 3/Quartile 3</b>			
4CM00	Control Engineering	E	5
4CM30	Supervisory control	D	5
4SC000	Optimal control and reinforcement learning	D	5
4DM20	Engineering optimization	B	5
<b>Kwart4/Quartile 4</b>			
4CM20	Hybrid systems and control	B	5
4CM50	Application of design principles	D	5

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\* = Bachelor course

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### Section MSE-DC

Code	Vak naam/Course name	Timeslot	SP
<b>Kwart 1/Quartile 1</b>			
4CM00	Control Engineering	C	5
4DM00	Structural Dynamics and vibro-acoustics	A	5
<b>Kwart 2/Quartile 2</b>			
4DM10	Multibody and Non-linear Dynamics	A	5
<b>Kwart 3/Quartile 3</b>			
4CM00	Control Engineering	E	5
4DM30	Non-linear control	A	5
4DM60	Control of distributed parameter systems	E	2,5
<b>Kwart4/Quartile 4</b>			
4DM40	Modelling and control of manufacturing systems	A	5
4DM70	Analysis and Design of Collective Dynamics in Networked	B	5

### Section MSE-MS/PT

Code	Vak naam/Course name	Timeslot	SP
<b>Kwart 1/Quartile 1</b>			
4BM00	Advanced Engineering Mathematics for MW	E	5
4CM00	Control Engineering	C/E	5
4UM00	Microfabrication methods	B/B	5
<b>Kwart 2/Quartile 2</b>			
4BM20	Experimentation for MW	E	5
4EM40	Heat and Flow in microsystems	C	5
4LM20	Polymer processing	C	5
<b>Kwart 3/Quartile 3</b>			
4CM00	Control Engineering	C/E	5
4UM10	Microfluidics-put-to-work	A	5
<b>Kwart4/Quartile 4</b>			
4DM40	Modelling and control of manufacturing systems	A	5
4MM50	Fracture mechanics – theory and appl	C	5
4UM00	Microfabrication methods	B/B	5

### Recommended homologation

Code	Vak naam/Course name	SP
<b>Online lectures</b>		
1CM210	Stochastic modeling in inventory and production control	2,5

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### Recommended free electives

Code	Vak naam/Course name	Timeslot	SP
<b>Kwart 1/Quartile 1</b>			
<b>Kwart 2/Quartile 2</b>			
1BM05	Business process management	B1	5
1CM180	Configuration management	C	2,5
1CM200	Warehouse Operations Management	B2	2,5
2IIG0*	Data mining and machine learning	C	5
<b>Kwart 3/Quartile 3</b>			
1BM110	Data analytics for business intelligence	C	5
2DI66	Advanced simulation	B	5
2DMN00	Design and analysis of experiments	D	5
<b>Kwart4/Quartile 4</b>			
1BM120	Computational Intelligence	E	5

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