Engineering courses for Master HTI & IS

UPDATE FEBRUARY 2023

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in cooperation with master representatives

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1   Introduction

- If you take courses from this list, approval is guaranteed.
- You can take courses from different disciplines, consult your mentor for this. In different lists you find courses in the same domain, for example ICT in ICT, Building Technology and OML or Energy in Energy and Building Technology, Robotics in Robotics and ICT
- You can propose other courses yourself, but then you need approval from the Program Chair and the Examination Committee. This procedure can take a month.
- Check carefully in Osiris if you have enough knowledge to follow the course. If you are not sure, contact the teacher of the course.
- In case you miss for a master course specific technical knowledge on bachelor level, you can submit a well motivated proposal to the Examination Commitee to follow one or more bachelor courses within your master as homologation courses. Keep in mind that you can take not more than three bachelor courses in total in your master (maybe you already have other homologation courses).
- You have to send your technical courses, together with your other electives and your international courses, to the Examination Committee for approval, before you leave for your international semester.
- The minimum amount of technical courses in the HTI master is 15 ects, in the IS master 10 ects. You also can take one or more technical courses abroad, possibly to complete these 15 or 10 ects. If you are not sure, check in time if an international course will be approved as technical. –
- For course information you can use (also) this extern Osiris link: https://tue.osiris-student.nl/#/onderwijscatalogus/extern/start?taal=en

2 Course list

2.1 ICT

2.1.1 Data Science and AI

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
1BM110	Data driven AI	5	GS3	C2	
1BM120	Decision making with A&CI	5	GS4	C	
2AMD15	Big Data Management	5	GS3	D2	
2AMD15	Big Data Management	5	GS3	D3	
2AMI10	Foundations of Process Mining	5	GS1	D3	
2AMI10	Foundations of Process Mining	5	GS1	D2	
2AMM10	Deep Learning	5	GS4	C1	
2AMM15	Machine Learning Engineering	5	GS3	B	
2IMP40	Empirical Methods in Software Engineering	5	GS2	E1	
2MMS20	Statistics for big data	5	GS4	E	

2.1.2 Software Engineering

Course Code	Course name	ECTS	Quartile	Timeslot	Remarks
2IMP15	Software project management	5	GS4	A1	
2IMP30	System Design Engineering	5	GS4	A3	
2IMP30	System Design Engineering	5	GS4	A2	
2IMV25	Interactive virtual environments	5	GS1	A1	
5ARA0	Software engineering for AI	5	GS1	D2	

2.1.3 Security

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
2DMI20	Software security	5	GS2	C2	
2IMS20	Cyberattacks Crime and Defenses	5	GS2	E1	
2IMS25	Principles of data protection	5	GS1	C2	
2IMS30	Advanced Network Security	5	GS3	D	

2.1.4 Other

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
1BM20	Business analysis for ITS	5	GS2	E2	
1BM20	Business analysis for ITS	5	GS2	E3	
2IHT10	Logic and set theory	2,5	GS1, 2 & 3	X	
2IMN15	Internet of things	5	GS2	E1 & E2	
5LIN0	Video processing	5	GS1	C1	
5LIV0	Video health monitoring	5	GS2	C2	
DBM140	Embodying intelligent behavior	5	GS1	E	Max 60 participants
DBM160	Data-enabled design	5	GS4	A	Max 60 participants
DBM170	Des user interfaces with emerging techn.	5	GS2	E	Max 50 participants
DBM180	Designing with advanced AI	5	GS2	E	Max 60 participants
DCM180	The sound of smart things	5	GS2	A	Max 30 participants

2.2 Building Technology & Mobility

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
7KP8M0	Smart building methodology & technology	5	GS3	C	
7KP9M0	Building technology	5	GS4	E	
7LL1M0	Sports and building aerodynamics	5	GS2	A	
7LL7M0	Capita selecta lighting technology	5	GS3	E	
7LS3M0	Sustainable buildings	5	GS1	A	
7LS6M0	Heat, air and moisture transfer / CFD2	5	GS4	E	
7LS8M0	Architectural acoustics	5	GS3	D	
7LS9M0	Heat, air and moisture transfer / CFD1	5	GS3	B & C	
7LY3M0	Building performance	5	GS1	C	
7LY4M0	Building services and fire safety	5	GS4	B	
7LY5M0	Data science for intelligent buildings	5	GS1	B	
7LY6M0	Materials panorama	5	GS2	A	
7LY7M0	Techniques in architectural acoustics	5	GS4	D	
7M900	Fundamentals of BIM	5	GS2	E	
7PP5M0	Resource efficient SED	5	GS1	A	
7QX3M0	Architectural engineering	5	GS2	D	
7S880	Lighting technology	5	GS2	C	
7XC1M0	Circularity in the built environment	5	GS1	A	
7ZM5M0	Process modeling	5	GS4	D	
7ZM7M0	Parametric design	5	GS3	A	
7ZW4M0	Built environment and smart mobility	5	GS4	C	
7ZW5M0	Smart healthy urban environments	5	GS2	D	
7ZZ9M0	Design science and systems engineering	5	GS1	B	

2.3   Energy Technology

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
3MF100	Fusion on the back of an envelope	5	GS1	E	
3MP110	Solar cells	5	GS3	D	
3MT130	Transport in porous media	5	GS4	E	
4AT020	Clean engines and future fuels	5	GS4	C	
4AT060	Powertrains	5	GS2	C	
4BM50	Intr. to petroleum production	2,5	GS3	D	
4EM50	Thermal energy storage	2,5	GS3	A2	
4EM70	Sustainable Energy Sources	5	GS2	A	
5LEB0	Environment and power engineering	2,5	GS1	X	
5LEE0	Electrical power eng. & syst. integ	5	GS1	D	
5LEJ0	Secondary batteries and hydrogen storage	2,5	GS4	A2	
5LEM0	Dynamic control of power conversion	5	GS4	E2	
5SEB0	Decentral power generation and act.	5	GS2	C2	
5SEC0	Planning and operation of power systems	5	GS2	D2 & D3	
5SEF0	Smart grids, ICT and electricity markets	5	GS3	D2	(used to be: 5LED0, this is the new course)

2.4   Robotics

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
0HM280	Human-robot interaction	5	GS4	C	
4CM00	Control engineering	5	GS1	C	Max 140 participants
4CM00	Control engineering	5	GS3	E	Max 140 participants
4CM60	Advanced motion control	5	GS2	B	
4SC020	Mobile robot control	5	GS4	D2 & D3	
4SC040	Haptics - perception and technology	2,5	GS4	A	

2.5   Operations Management & Logistics

Course code	Course name	ECTS	Quartile	Timeslot	Remarks
1BM05	Business process management	5	GS2	B1	
1BM110	Data driven AI	5	GS3	C2	
1BM120	Decision making with A&CI	5	GS4	C	
1BM130	Design of AI-driven business operation	5	GS4	B1	
1BM140	EKIP	5	GS1	B2 & B3	
1CM110	Dec making in transport & Log	5	GS2	A	
1CM120	Adv maintenance and service Log	5	GS2	A	
1CM130	Design for transport and logistics	5	GS4	B	
1CM140	Design of oper plan & contr systems	5	GS4	B2 & B3	
1CM15	Project and process management	5	GS4	D	
1CM150	Advanced planning and scheduling systems	5	GS1	C	
1CM170	Sustainable supply chains	5	GS4	E	
1CM190	Health care operations planning	2,5	GS2	C2	
1CM200	Warehouse operations management	2,5	GS2	B2	
1CM200	Warehouse operations management	2,5	GS2	B3	
1CM240	AI for Logistics	5	GS3	D1	

3 Academic Calendar & Timeslots

For more information about the Academic Calendar, click here

Timeslots Education weeks

		Monday	Tuesday	Wednesday	Thursday	Friday
1+2	08.45-10.30	A1	C1	B1	E1	D1
3+4	10.45-12.30	A2	C2	B2	E2	D2
	12.30-13.30					
5+6	13.30-15.15	B1	E1	D1	A1	C1
7+8	15.30-17.15	B2	E2	D2	A2	C2
9+10	17.30-19.15	E3	D3	A3	B3	

Timeslot Exam weeks

		Monday	Tuesday	Wednesday	Thursday	Friday
week 1	09.00-12.00	A1	E1	B1	D1	C1
	13.30-16.30	A1	E1	B1	D1	C1
	18.00-21.00	Resit A1	Resit E1	Resit B1	Resit D1	Resit C1
		Monday	Tuesday	Wednesday	Thursday	Friday
week 2	09.00-12.00	A2	E2	C2	D2	B2
	13.30-16.30	A2	E2	C2	D2	B2
	18.00-21.00	Resit A2	Resit E2	Resit C2	Resit D2	Resit B2

And to Download the Timeslot model, please click here