Practical Guide

for students of the Master Engineering Systems

September 2023

Contents

INTRODUCTION

Dear student,

A warm welcome to the HAN Master Degree programme Engineering Systems! In this guide we have gathered practicalities you need for your degree programme at the HAN.

'Translation of research into products' is the focus of the programme, meeting the demands of industry as well as other research institutions that are active in applied research and product development in the engineering area. There is a real need for goal oriented professionals who are able to translate research into products relevant to market and society. During the course you will gain the skills and knowledge to plan and carry out research/development projects that contribute to the development of products. Scientific knowledge and skills, project management and communication skills are trained during the programme.

On the one hand the programme is designed to enable (experienced) technicians to combine their present work with study. By working on realistic assignments and case studies in the programme, students and employers have direct and tangible advantages in the professional practice.
On the other hand the programme enables future technicians to work on their qualifications. The acquired qualification enables graduates to start or to continue their career as a linking pin between technicians and (scientific) management, and between different departments.

Students and alumni describe the master programme as high quality, contemporary and a tailor-made programme which kick-start their careers. The accreditation score in 2020, in which the master programme was evaluated in terms of aims, content, organization, staff, facilities, quality assurance and results, underscore this description. That means that each level, teachers, educational staff and the programme manager aim for the best education they can offer. Students can participate actively, so that their voices are heard and their education is continuously improving.

Naturally, any organization requires some rules and regulations. In the Degree Statute (to be found on Onderwijs Online, see page 11), you will find extensive information about the setup of your degree programme.

On the next pages, you will find all the practical information we think you need regarding where to find what. We are curious to know how you experience this practical guide. Suggestions for improvement are always welcome! Do not hesitate give us suggestions and comments via educationoffice.tm@han.nl or meet us in person (contact names can be found in the Degree Statute and on page 14).

 We wish you the best of luck with your studies!
Teachers and staff Master Engineering Systems

HOW IS THE DEGREE PROGRAMME STRUCTURED / WHICH MODULES?

The programme is thematically grouped into so-called modules. In each module learning outcomes concerning knowledge, applying knowledge, the ability to make choices and your professional skills are examined.

Your master programme consists of 5 modules, each of which has its own character. The modules Systems Modelling and Applied Control (both 15 EC) and the module Major Project (30 EC) are mandatory for all students.

The table below shows the structure of the elective modules in each track. You can choose two modules (together 30 credits). It is not necessary to choose these from one study track. More combinations are possible. Some combinations are not possible, for instance when the timetable for classes shows that they are offered on the same day of the week.

Tracks	Elective modules
AS *Automotive Systems*	Advanced Vehicle Dynamics Hydrogen Technology Innovations in Powertrains Intelligent Mobility
CPS *Cyber-Physical Systems*	Advanced Vehicle Dynamics Big Data & Small Data Embedded Control
SE *Sustainable Energy*	Hydrogen technology Smart Power Supply Sustainable Energy Systems (mandatory for SE)

WHEN DO WE OFFER THE MODULES?

The modules are offered according to the following scheme for your 1st and 2nd Semester:

Semester August - January				
Monday	Tuesday	Wednesday	Thursday	Friday
Systems Modelling Big Data & Small Data	Advanced Vehicle Dynamics Sustainable Energy Systems	Applied Control	Innovations in Powertrains	Mathematics
		Electives: Guest lectures		

Semester February - July				
Monday	Tuesday	Wednesday	Thursday	Friday
Big Data & Small Data Hydrogen Technology	Advanced Vehicle Dynamics Sustainable Energy Systems	Applied Control	Intelligent Mobility Innovations in Powertrains Embedded Control Smart Power Supply	Mathematics
		Electives: Guest lectures		

SCHEDULES / TIME TABLES

General

Each academic year covers 2 semesters, and each semester comprises 2 terms. Each term consists of lectures, and finishes with an exam week after 8 weeks. The MES timetable 2023-2024 can be found on the next page.

Your timetable each term

A handy tool (XEDULE) for viewing your timetable each week can be found on HAN Insite.
https://www1.han.nl/insite/en/students/timetables-lecture-times-academic-calendar/ / https://sa-han.xedule.nl/

Period **01** 09:00 – 09:45
Period **02** 09:45 – 10:30
Period **03** 10:45 – 11:30
Period **04** 11:30 – 12:15
Period **05** 12:15 – 13:00

Period **06** 13:00 – 13:45   **Start lessons**
Period **07** 13:45 – 14:30
Period **08** 14:30 – 15:15
Period **09** 15:30 – 16:15

Period **10** 16:15 – 17:00
Period **11** 17:00 – 17:45   Pause

Period **12** 17:45 – 18:30
Period **13** 18:30 – 19:15
Period **14** 19:15 – 20:00
Period **15** 20:00 – 20:45

Period **16** 20:45 – 21:30

MES timetable 2023 – 2024						
Week	Monday	Term	Lectures	Remarks	Exam board meetings	Major project hand in and defences
35	28.08	1.1	Lectures			
36	04.09	1.2	Lectures			
37	11.09	1.3	Lectures	Info session degree statute		
38	18.09	1.4	Lectures			
39	25.09	1.5	Lectures	Info Session Major Project	28.09	27.09: hand in thesis
40	02.10	1.6	Lectures			
41	09.10	1.7	Lectures	Info Session Elective Modules		
42	16.10			Autumn holidays		
43	23.10	1.8	Lectures		26.10	24/25.10: defences P1A
44	30.10	1.9	Exams			01.11: hand in thesis
45	06.11	2.1	Lectures			
46	13.11	2.2	Lectures			
47	20.11	2.3	Lectures		23.11	21/22.11: defences P2A
48	27.11	2.4	Lectures	Reviews exams 1.9		
49	04.12	2.5	Lectures			
50	11.12	2.6	Lectures	Info Session Major Project		
51	18.12	2.7	Lectures		21.12	20.12: hand in thesis
52	25.12			Christmas Holidays		
01	01.01			Christmas Holidays		
02	08.01	2.8	Lectures			
03	15.01	2.9	Exams			
04	22.01	2.10	Exams		25.01	23/24.01: defences P2A
05	29.01	3.1	Lectures			
06	05.02	3.2	Lectures			
07	12.02			Spring Holidays		
08	19.02	3.3	Lectures		22.02	
09	26.02	3.4	Lectures	Reviews exams 2.9		
10	04.03	3.5	Lectures	Diploma Ceremony March 8		06.03: hand in thesis
11	11.03	3.6	Lectures			
12	18.03	3.7	Lectures	Info Session Elective Modules PT		
13	25.03	3.8	Lectures	29.03: Good Friday	28.03	26/27.03: defences P3A
14	01.04	3.9	Exams	01.04: Easter Monday		03.04: hand in thesis
15	08.04	4.1	Lectures			
16	15.04	4.2	Lectures	Info Session Major Project		
17	22.04	4.3	Lectures		25.04	23/24.04: defences P4A
18	29.04			May Holidays		
19	06.05	4.4	Lectures	09.05: Ascension Day		08.05: hand in thesis
20	13.05	4.5	Lectures	Reviews exams 3.9		
21	20.05	4.6	Lectures	20.05: Whit Monday		
22	27.05	4.7	Lectures		30.05	28/29.05 defences P4A
23	03.06	4.8	Lectures			
24	10.06	4.9	Exams			12.06: hand in thesis
25	17.06	4.10	Exams			
26	24.06	4.11	Exams		27.06	
27	01.07	4.12	Exams	Reviews exams 4.9		02/03.07: defences P5A
28	08.07	4.13		Diploma Ceremony July 12	08.07	
29	15.07			Summer Holidays		
34	19.08	0	Exams			19.08: hand in thesis
35	26.08	0	Exams	Introduction new students	29.08	26 – 29.08: defences P5A
36	02.09	1	lectures			

EXAMS

Exam opportunities
On the last pages of this guide (appendix 1) you can find the exam opportunities per module for the Master Engineering Systems. According to Part 2 of the Degree Statute you have 2 opportunities a year for the exams during the theoretical phase. Should you need a third opportunity: Apply to the Exam Board. You must also apply to the Exam Board for exemptions and extensions.

Exam schedules
Written exams, home taken exams, presentations etc. can be found in appendix 1 of this guide. As you may have noticed there is often a large time lapse between an exam and the re-examination. This is a conscious decision on our part. The gap gives you enough time to review your exam, consult the lecturer, and revise the materials sufficiently. If you have failed an exam, you need time to revisit the learning material regularly, so that you are better able to retain it. Sometimes you can also gain completely new insights when you take a break from the learning materials. This also provides you as first year student more time to adjust to the pace and depth of higher education vocational training. Also, attending the follow-up programmes while revising for a re-sit may help you to better process the learning material for the failed exam.

Registration re-exams
You have to register for the re-exams. Dates and deadlines for registration and the way you have to register can be found in the degree statute.

Rules and Instructions for exams
All the information about rules and instructions for exams can be found in Assessment Why and How on Onderwijs Online (general information) and in the degree statute.

TOOLS AND SYSTEMS TO USE

OnderwijsOnline

During your degree programme, you will frequently consult 'OnderwijsOnline'
https://onderwijsonline.han.nl/. This is thé electronic learning environment for readers, PowerPoints, assignments, dummy exams and video support. On OnderwijsOnline you will also find general information for instance about the exam regulations and of course the Degree Statute. The online tool is generally self-explanatory and has its own help files and manuals. However, the Education Office staff are available to help if you encounter problems, for example if certain course content is not available. Visit us in R29/H1.19 or e-mail us at educationoffice.tm@han.nl

Handin app

Home taken exams are to be submitted to in Handin. More information can be found on HAN Insite or OnderwijsOnline.

OSIRIS

OSIRIS is the online information and registration system where you can find information about your study contract with your chosen modules and your exam results. Please check regularly that all your marks have been added correctly in OSIRIS.

ANS

Online written exams are conducted in https://ans.app/landing, an online exam/testing/ grading system.

Student software licenses

Student software licenses for Microsoft Windows and Microsoft Office can be purchased inexpensively for HAN students via www.surfspot.nl. ***You need a WEBCAM and microphone to participate in online lessons and exams.**

WHERE TO FIND STUDY INFORMATION YOU NEED

Study and multimedia centre

Higher education at HAN also involves research at a higher level. The HAN library in Ruitenberglaan 31 is called the 'Study and Multimedia Centre'. It offers plenty of useful resources for research by Engineering students. The Study and Multimedia Centre website (https://specials.han.nl/sites/studycentres) offers various resources such as the following:

HANQUEST

This search engine allows access to materials available in the HAN Study and Multimedia Centre collection and also databases containing scientific journal articles (e.g. Science Direct, Wiley and Sprinkerlink). These commercial databases offer edited and high quality publications not found via Google.

DATABASES

Quality research requires valid databases for your literature studies. A HAN list is given below of the individual databases, such as NEN Connect, HBO Kennisbank and ISSO.

HAN INFORMATION SPECIALISTS

If you run into trouble and/or need help searching and finding information, the librarians or information specialists at the Study and Multimedia Centre at Ruitenberglaan 31 are available to help you. Simply make an appointment. In OnderwijsOnline you can find them too:
https://onderwijsonline.han.nl/elearning/content/RDp4O3Dp

PRACTICALITIES / CONTACT INFORMATION

Education Office Master Engineering Systems

We are here to help you with any questions related to your study progress, exam opportunities, procedures, theoretical phase, etc. Please visit us in R29 H1.19 or e-mail us at educationoffice.tm@han.nl. We are open Monday – Thursday from 9.00 – 17.00 hrs.
We are happy to help you!
Xera Alberts, Melissa Gorkink, Seline Konings and Esther Uwland.

Graduation procedure

For questions relating to your Major Project after the theoretical phase you can contact finalthesis@tm@han.nl.

Study Coach

If you have questions or concerns about your study progress, you can talk to your study coach. You can also ask the staff of the Education Office; they can provide you with information, or assist you in making an appointment with your study coach.
Our study coaches are:
Seline Konings, Jeroen van Tongeren, Esther Uwland.
In case of content: Coordinating lecturers of the modules.

Exam Board

If you need to send a request to the Exam Board, you can send an e-mail to examboard.tm@han.nl.
Our members are:
Marijn Jongerden and Thymen Kamerling.

Degree Committee

The degree committee advises the course department about promoting and guaranteeing the quality of the degree programme. Each year it also evaluates the degree programme's compliance with the education and examination regulations. Would you like to become a member of the degree committee? You can request more information from educationoffice.tm@han.nl. The degree committee has its own regulations (see Part 3)
Our staff members are:
Jeroen van Tongeren and Esther Uwland.

Your HAN e-mail address

Your e-mail address is {yourname}@student.han.nl. We will use your HAN email address to communicate with you for anything related to your studies.

Communication channels

The Education Office will regularly inform you about important study-related issues by email (newsletter: monthly MES Updates). The Education Office may also schedule regular (online) info sessions in MS Teams.

International Office

The International Office has provided you with information about living in the Netherlands. You can reach them at internationaloffice@han.nl. If necessary the staff of the Education Office can help you to make an appointment.

Immigration

The Immigration office can help you with any questions relating to your Visa, health insurance, etc. You can reach them at immigration@han.nl.

CIC Desk

The CIC can help you with questions regarding your tuition fee, payments, etc. You can reach them at CICdesk@han.nl.

Student Enquiry Desk

In the hall of R26 is the Student Enquiry Desk. There you can ask any question about the practical side of studying at HAN. You can also ask for proof of enrolment or transcripts. You can e-mail them at ASK@HAN.nl or visit them in the main reception at R26.

Service Desk

The Service Desk is the contact point for all facility and IT questions like applications, HAN card, the technical side of systems and for reservations and complaints at HAN. You can reach the Service Desk: e-mail: ASK@HAN.nl phone:(024) 353 16 66 (Monday to Friday, from 8.00 to 19.00) location: Ruitenberglaan 31 Arnhem, C-wing, room C0.23, (Monday to Friday 8.00 to 17.00) The ServiceDesk is also available during holiday periods by e-mail at ASK@HAN.nl or by phone (024-3531666).

STUDENT MEETING POINTS AT THE HAN

Arnhem Student Sports

Arnhem Student Sports is an organisation that manages municipal sport accommodations in the city. With a student sports card, you can enjoy your sport at one of the accommodations for little money. The card is available for students of all institutes of higher learning in Arnhem.

More information about Arnhem Student Sports can be found on the website:

https://www.sportinarnhem.nl/studenten

SAM

Sam is the online HAN news medium for students and staff. Visit Sam to access films and fun background articles about past or future events at HAN. https://sam.han.nl/

ISA

ISA is an organisation run by students for students. ISA´s goal is to help new students to integrate into the international community at HAN. https://www1.han.nl/insite/en/students/student-life/student-organizations/?_ga=2.1449201.1758435809.1639986783-669640556.1613984018

Project group against Loneliness - Living room ISB at HAN

The project group at International School of Business has created a living room for these students in the 'base camp', a room in the building at Ruitenberglaan 31 on the Arnhem campus. No lessons are given there. Master Engineering Systems students are also welcome.

https://hanuniversity.com/en/news/2021/03/international-students-welcome-in-living-room/

Arnhem Student Point

This is a place where you can just be, a meeting point for students. https://arnhemstudentpoint.nl/.

SV Amoras

SV Amoras is the Student Association for bachelor students at the HAN UAS School of Engineering and Automotive, but Master Engineering Systems are also welcome to join their activities. More information: www.svamoras.nl or via info@svamoras.nl.

Appendix 1: Exam opportunities per module for the Master Engineering Systems:

Exam opportunities Master Engineering Systems: According to the degree statute (part 2) you have two opportunities each academic year to take an exam or modular exam. Some of the modules however offer more opportunities. You are allowed to **choose 2 of them**!
(Group) reports, assignments and HTEs must be submitted in Handin.

Subject	OSIRIS code	Term 1 P1A	Term 2 P2A	Term 3 P3A	Term 4 P4A	MP / CS re exam P5A	HTE / WE re exam P5A	Takes place on/ according to
M SM Systems Modelling (Module code OSIRIS SYSTMO60)								
Applied Physics	APPLPH06	1.9	2.10 FRI	3.9			August	Monday
Introduction Modelling	INTRMO05	1.9	2.10 FRI	3.9			August	Monday
Practice Modelling and Simulation	PRAMOS08	1.9	2.10 FRI	3.9			August 19	Monday
Energy based Modelling	ENEBAM10		2.9				August	Monday
System Identification	SYSTID07		2.9				August 19	Monday
M SM Minor Project Project Plan TOETS-01	MODSYM04	1.9	2.4					Monday
M SM Minor Project Report & Presentation TOETS-02	MODSYM04		2.9 / 2.10			4.11 / 4.12		Report/Presentation: Monday
M SM Minor Project Group Contribution TOETS-03	MODSYM04		2.9 / 2.10			4.11 / 4.12		
M AC Applied Control (Module code OSIRIS APPLC060)								
Feedback Control TOETS-01	FEEDCO04	1.9		3.9			August	Wednesday
Feedback Control, Digital Control TOETS-02	FEEDCO04		2.9		4.9		August 19	Wednesday
Apply Control Strategies	APPCOS16	1.9		3.9			August 19	Wednesday
Controller Implementation	CONTIM04		2.9		4.9	4.11 / 4.12		Wednesday
Multivariable systems and optimization	MULSYO02		2.9		4.9		August	Wednesday
M AC Minor Project Project Plan TOETS-03	APPCOM14	1.9	2.4	3.9	4.4			
M AC Minor Project Poster Presentation TOETS-01	APPCOM14		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report/Presentation: Wednesday
M AC Minor Project Group Contribution TOETS-02	APPCOM14		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		

Subject	OSIRIS code	Term 1 P1A	Term 2 P2A	Term 3 P3A	Term 4 P4A	MP / CS re exam P5A	HTE / WE re exam P5A	Takes place on/ according to
ELECTIVES								
M AVD Advanced Vehicle Dynamics (Module code OSIRIS ADVVED60)								
M AVD Theory TOETS-01	ADVVED28	1.9		3.9			August	Tuesday
M AVD Theory TOETS-02	ADVVED28		2.9		4.9		August	Tuesday
M AVD Capita Selecta	ADVVED33		2.9		4.9	4.11 / 4.12		Tuesday
M AVD Minor Project Project Plan TOETS-03	ADVVEE10	1.9	2.4	3.9	4.4			Tuesday
M AVD Minor Project Documentation & Defence TOETS-01	ADVVEE10		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report / Presentation: Tuesday
M AVD Minor Project Group Contribution TOETS-02	ADVVEE10		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		
M BDSD Big Data & Small Data (Module code OSIRIS BIGDAS80)								
M BDSD Theory TOETS-01	DATCOM02	1.9		3.9			August 19	Monday
M BDSD Theory TOETS-02	DATCOM02		2.9		4.9		August 19	Monday
M BDSD Capita Selecta	CAPSEM07		2.9		4.9	4.11 / 4.12		Monday
M BDSD Minor Project Report and Defence TOETS-01	BIGDAM05		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report/Presentation: Monday
M BDSD Minor Project Group Contribution TOETS-02	BIGDAM05		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		
M EC Embedded Control (Module code OSIRIS EAMDEC01)								
M EC Theory	EAECTH01				4.9		August 19	Thursday
M EC Capita Selecta	EAECCS01				4.4	4.11 / 4.12		Thursday
M EC Minor Project Project Plan TOETS-01	EAECMP01			3.9	4.4			Thursday
M EC Minor Project Report & Presentation TOETS-03	EAECMP01				4.9 / 4.10	4.11 / 4.12		Report/Presentation: Thursday
M EC Minor Project Group Contribution TOETS-02	EAECMP01				4.9 / 4.10	4.11 / 4.12		

Subject	OSIRIS code	Term 1 P1A	Term 2 P2A	Term 3 P3A	Term 4 P4A	MP / CS re exam P5A	HTE / WE re exam P5A	Takes place on/ according to
M HT Hydrogen Technology (Module code OSIRIS HYDRTE60)								
M HT Theory TOETS-01	HYDTET01			3.9			August	Monday
M HT Theory TOETS-02	HYDTET01				4.9		August	Monday
M HT Theory TOETS-03	HYDTET01				4.6		August 19	Monday
M HT Capita Selecta	HYDTEC01			3.9		4.11 / 4.12		Monday
M HT Minor Project Project Plan TOETS-03	HYDTEM05			3.9	4.3			Monday
M HT Minor Project Report & Presentation TOETS-02	HYDTEM05				4.9 / 4.10	4.11 / 4.12		Report/ Presentation: Monday
M HT Minor Project Group Contribution TOETS-01	HYDTEM05				4.9 / 4.10	4.11 / 4.12		
M IM Intelligent Mobility (Module code OSIRIS EAMDIM01)								
M IM Theory TOETS-01	EAIMTH01				4.7		August 19	Thursday
M IM Theory TOETS-02	EAIMTH01				4.9		August	Thursday
M IM Capita Selecta TOETS-01	EAIMCS01				4.6	4.11 / 4.12		Thursday
M IM Capita Selecta TOETS-02	EAIMCS01				4.6	4.11 / 4.12		Thursday
M IM Minor Project Project Plan TOETS-01	EAIMMP01			3.9	4.4			Thursday
M IM Minor Project Group Contribution TOETS-02	EAIMMP01				4.10			Thursday
M IM Minor Project Report & Presentation TOETS-03	EAIMMP01				4.9 / 4.10	4.11 / 4.12		Report/Presentation: Thursday
M IPT Innovation in Powertrains (Module code OSIRIS INNINP60)								
M IPT Theory TOETS-01	INNPOT25		2.7		4.7		August 19	Thursday
M IPT Theory TOETS-02	INNPOT25	1.9		3.9			August	Thursday
M IPT Theory TOETS-03	INNPOT25		2.9		4.9		August	Thursday
M IPT Capita Selecta	INNPOC01		2.1		4.1	4.11 / 4.12		Thursday
M IPT Minor Project Project Plan TOETS-03	INNPOM01	1.9	2.4	3.9	4.4			Thursday

Subject	OSIRIS code	Term 1 P1A	Term 2 P2A	Term 3 P3A	Term 4 P4A	MP / CS re exam P5A	HTE / WE re exam P5A	Takes place on/ according to
M IPT Minor Project Documentation & Defence TOETS-02	INNPOM01		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report/Presentation: Thursday
M IPT Minor Project Group Contribution TOETS-01	INNPOM01		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		
M SPS Smart Power Supply (Module code OSIRIS SMAPOS60)								
M SPS Energy Management	ENERMA02				4.9		August 19	Thursday
M SPS Power Control	POWECO01			3.9			August 19	Thursday
M SPS Power Quality	POWEQU01				4.9		August	Thursday
M SPS Asset Management	ASSEMA01			3.9			August	Thursday
M SPS Minor Project Documentation and defence TOETS-01	SMAPOS04							
M SPS Minor Project Group Contribution TOETS-02	SMAPOS04				4.9 / 4.10	4.11 / 4.12		Report/Presentation: Thursday
M SES Sustainable Energy Systems (Module code OSIRIS SUSENS60)								
M SES Theory TOETS-01	SUSENS10	1.9		3.9			August	Tuesday
M SES Theory TOETS-02	SUSENS10		2.9		4.9		August	Tuesday
M SES Theory TOETS-03	SUSENS10		2.9		4.9		August 19	Tuesday
M SES Capita Selecta	SUSENS08	1.9		3.9		4.11 / 4.12		Tuesday
M SES Minor Project Documentation & Defence TOETS-01	SUSENS35		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Tuesday
M SES Minor Project Group Contribution TOETS-02	SUSENS35		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		
M MAJP Major project (Module code OSIRIS EAMDMP01)								
Major project	EAMAPR01							According to time schedule MES (Practical Guide) on #OO