

Practical Guide
for students of the Master Engineering Systems



September 2022

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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 programmes as high quality, contemporary and tailor-made programmes 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 <i>Automotive Systems</i>	Advanced Vehicle Dynamics Advanced Controller Design Hydrogen Technology Innovations in Powertrains Sustainable Fuel Engines and Emissions Smart Infrastructure Smart Vehicles
CES <i>Control & Embedded Systems</i>	Advanced Controller Design Big Data & Small Data Distributed Systems
SE <i>Sustainable Energy</i>	Hydrogen technology Smart Power Supply Sustainable Energy Systems (mandatory for SE)
	Theoretical part of Big Data & Small Data : can be followed by students AS and SE during the electives or together with the major project.

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	Advanced Vehicle Dynamics	Applied Control	Innovations in Powertrains	Mathematics
Big Data & Small Data	Sustainable Energy Systems		Smart Vehicles	
Hydrogen Technology (September 2023)			Advanced Controller Design (September 2023)	
		Term 1 and 2: Lessons How to write a thesis		

Semester February - July				
Monday	Tuesday	Wednesday	Thursday	Friday
Big Data & Small Data	Smart Infrastructure	Applied Control	Smart Vehicles	Mathematics
Hydrogen Technology	Sustainable Fuel, Engines and Emissions		Innovations in Powertrains	
Systems Modelling term 3: Applied Physics, Introduction Modelling and Practice Modelling and Simulation	Advanced Vehicle Dynamics		Advanced Controller Design	
	Distributed Systems		Smart Power Supply	
	Sustainable Energy Systems			
		Term 3 and 4: Lessons How to write a thesis		
		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 2022-2023 can be found on the next page.

Your timetable each term

A handy tool for viewing your timetable each week can be found on HAN Insite.

<https://www1.han.nl/insite/en/students/timetables-lecture-times-academic-calendar/>

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 2022 - 2023						
Week	Monday	Term	Lectures	remarks	Exam board meetings	Major project hand in and defences
35	29.08	1.1	Lectures			
36	05.09	1.2	Lectures			07.09: hand in thesis
37	12.09	1.3	Lectures	Info session degree statute		
38	19.09	1.4	Lectures			
39	26.09	1.5	Lectures		29.09	27/28.09: defences 28.09: hand in thesis
40	03.10	1.6	Lectures	07.10: Diploma Ceremony		
41	10.10	1.7	Lectures	Info Session Elective Modules		
42	17.10	1.8	Lectures		20.10	18/19.10: defences
43	24.10			Autumn holidays		
44	31.10	1.9	Exams			02.11: hand in thesis
45	07.11	2.1	Lectures	Info Session Major Project		
46	14.11	2.2	Lectures			
47	21.11	2.3	Lectures		24.11	22/23.11: defences
48	28.11	2.4	Lectures	Reviews exams 1.9		30.11: hand in thesis
49	05.12	2.5	Lectures			
50	12.12	2.6	Lectures			
51	19.12	2.7	Lectures		22.12	20/21.12: defences 21.12: hand in thesis
52	26.12			Christmas Holidays		
01	02.01			Christmas Holidays		
02	09.01	2.8	Lectures			
03	16.01	2.9	Exams			
04	23.01	2.10	Exams		26.01	24/25.01: defences
05	30.01	3.1	Lectures			
06	06.02	3.2	Lectures			
07	13.02	3.3	Lectures		16.02	
08	20.02			Spring Holidays		
09	27.02	3.4	Lectures	Reviews exams 2.9		
10	06.03	3.5	Lectures	10.03: Diploma Ceremony		08.03: hand in thesis
11	13.03	3.6	Lectures			
12	20.03	3.7	Lectures	Info Session Elective Modules PT		
13	27.03	3.8	Lectures		30.03	28/29.03: defences
14	03.04	3.9	Exams	07.04: Good Friday		05.04: hand in thesis
15	10.04	4.1	Lectures	10.04: Easter Monday		
16	17.04	4.2	Lectures	Info Session Major Project		
17	24.04	4.3	Lectures	27.04: Kings Day 28.04 Start May Holidays	26.04	25.04: defences 26.04: hand in thesis
18	01.05			May Holidays		
19	08.05	4.4	Lectures	Reviews exams 3.9		
20	15.05	4.5	Lectures	18.05: Ascension Day		
21	22.05	4.6	Lectures		25.05	23/24.05 defences
22	29.05	4.7	Lectures	29.05: Whit Monday		31.05: hand in thesis
23	05.06	4.8	Lectures			
24	12.06	4.9	Exams			
25	19.06	4.10	Exams			
26	26.06	4.11	Exams		29.06	27/28.06: defences
27	03.07	4.12		Reviews exams 4.9 07.07: Diploma Ceremony	06.07	
28	10.07			Summer Holidays		
33	14.08	0	Exams			14.08: hand in thesis
34	21.08	0	Exams		31.08	21 – 25.08: defences

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 can be found in appendix 1 of this guide and in the time tables. Home taken exams can be found in this guide (appendix 1). 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. The Education Office will inform you of the date of the deadline for registration and the way you have to register.

Rules and Instructions for online written exams

All the information about rules and instructions for online written exams can be found on Onderwijs Online (general information) in (1) Get ready for your exam, (2) Student Instructions ANS and (3) Privacy. It is very important to read these documents at least one week before the exams are scheduled.

Rules and Instructions for written exams organized at HAN

- You have to be present 10 minutes in advance of the official start of the exam. After the official start you will not be allowed to enter.
- You have to present an ID (HAN-card, ID-card, driving permit, train-pass) at the registration desk and sign the Attendance List.
- You may leave the exam-room after 30 minutes have passed, until fifteen minutes before the official end of the exam.
- Mobile phones must be switched off, smart-watches are not allowed. These items must be placed with your jacket and bag at the front of the room;
- Drinks may only be consumed from a re-sealable bottle; food items are allowed during exams that last longer than 150 minutes; eating must be without noise.
- Bathroom visits are allowed if the exam lasts longer than 90 minutes.
- The permitted resources during this exam are printed on the exam-envelope; you may not use anything other than what is mentioned on the envelope;

- You have to write your name on each answer sheet. On the cover page you write your name and student number;
- You must use official HAN-paper for answering questions/problems. Scrap paper will not be evaluated.
- All scrap paper must be handed in, also the printed exam must be handed in.
- You must put all the papers in the file that is given to you, and place it at the right corner of your desk.
- You must place your HAN-card on the file. The supervisor will check your pass against the name on your exam.
- At the end of the exam-time the invigilator will collect your work from your desk.
- The Board of Examiners will be informed of any irregularities.

The complete rules can be found in the Degree Statute.

TOOLS AND SYSTEMS TO USE

OnderwijsOnline

During your degree programme, you will frequently consult 'Onderwijs Online' <https://onderwijsonline.han.nl/>. This is the 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 R26 A0.09 or e-mail us at educationoffice.tm@han.nl

Handin app

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

Alluris

Alluris 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 Alluris. Alluris will be replaced by the new online information and registration system Osiris before the start of semester 2. You will receive information about Osiris in due time.

ANS

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

Proctorio

Online proctoring is a tool to take exams in a controlled way. Because of the technique used, different ways of fraud are prevented. In addition, the system supports detection and reports/analyses that can be done afterwards. Online proctoring is possible for online examinations.

Proctoring is only used during an exam and does not have access to your computer.

Do you have an examination that uses online proctoring? For more information about privacy take a look at the document Privacy.

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 Springerlink). 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!

Kea Bouwman – programme manager

Seline Konings – Graduation procedure

Esther Uwland - Modules, registrations, theoretical phase

Jeroen van Tongeren - Study Coach

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.

Exam Board

If you need to send a request to the Exam Board, you can send an e-mail to examboard.tm@han.nl.

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.svamorass.nl or via info@svamorass.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	Term 1	Term 2	Term 3	Term 4	MP / CS re exam	HTE / WE re exam	Takes place on/ according to
Systems Modelling							
M SM AP	1.9		3.9			August	Monday
M SM IM WE	1.9		3.9			August	Monday
M SM PMS HTE	1.9		3.9			August 14	Monday
M SM EBM WE		2.9				August	Monday
M SM SI HTE		2.9				August 14	Monday
M SM MP PP	1.9	2.4					Monday
M SM MP RP		2.9 / 2.10			4.11 / 4.12		Report & Presentation: Monday
Applied Control							
M AC FC WE	1.9		3.9			August	Wednesday
M AC FC HTE		2.9		4.9		August 14	Wednesday
M AC ACS HTE		2.9		4.9		August 14	Wednesday
M AC CI HTE		2.9		4.9	4.11 / 4.12		Wednesday
M AC MSO WE	1.9		3.9			August	Wednesday
M AC MP PP	1.9	2.4	3.9	4.4			
M AC MP RP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Wednesday
Elective modules							
Advanced Controller Design							
M ACD T HTE1			3.9	4.4			Thursday
M ACD T HTE2				4.9		August 14	Thursday
M ACD CS				4.6	4.11 / 4.12		Thursday
M ACD MP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Thursday

Subject	Term 1	Term 2	Term 3	Term 4	MP / CS re exam	HTE / WE re exam	Takes place on/ according to
Advanced Vehicle Dynamics							
M AVD WE	1.9		3.9			August	Tuesday
M AVD OE		2.9		4.9		August	Tuesday
M AVD CS		2.9		4.9	4.11 / 4.12		Tuesday
M AVD MP PP	1.9	2.4	3.9	4.4			Tuesday
M AVD MP RP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Tuesday
Big Data & Small Data							
M BSDS T HTE1	1.9		3.9			August 14	Monday
M BSDS T HTE2		2.9		4.9		August 14	Monday
M BSDS CS		2.9		4.9	4.11 / 4.12		Monday
M BSDS MP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Monday
Distributed Systems							
M DS HTE			3.9			August 14	Tuesday
M DS OE				4.9		August	Tuesday
M DS CS				4.6	4.11 / 4.12		Tuesday
M DS MP PP			3.9	4.4			Tuesday
M DS MP RP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Wednesday
Innovations in Powertrains							
M IPT HTE		2.7		4.7		August 14	Thursday
M IPT WE 1	1.9		3.9			August	Thursday
M IPT WE 2		2.9		4.9		August	Thursday
M IPT CS		2.1		4.1	4.11 / 4.12		Thursday
M IPT MP PP	1.9	2.4	3.9	4.4			Thursday
M IPT MP RP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Thursday

Hydrogen Technology							
M HT WE1			3.9			August	Monday
M HT WE2				4.9		August	Monday
M HT HTE				4.6		August 14	Monday
M HT CS				4.9	4.11 / 4.12		Monday
M HT MP PP			3.9	4.4			Monday
M HT MP RP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Monday
Smart Infrastructure							
M SI T WE			3.9			August	Tuesday
M SI CS				4.6	4.11 / 4.12		Tuesday
M SI MP PP			3.9	4.2			Tuesday
M SI MP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Tuesday
Smart Power Supply							
M SPS EM HTE				4.9		August 14	Thursday
M SPS PC HTE			3.9			August 14	Thursday
M SPS PQ WE				4.9		August	Thursday
M SPS AM WE			3.9			August	Thursday
M SPS MP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Thursday
Smart Vehicles							
M SV T HTE	1.9		3.9			August	Thursday
M SV CS		2.6		4.6	4.11 / 4.12		Thursday
M SV MP PP	1.9	2.2	3.9	4.2			Thursday
M SV MP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Thursday
Sustainable Energy Systems							
M SES T WE1	1.9		3.9			August	Tuesday
M SES T WE2		2.9		4.9		August	Tuesday
M SES T HTE		2.9		4.9		August 14	Tuesday
M SES CS		2.9		4.9	4.11 / 4.12		Tuesday

M SES MP		2.9 / 2.10		4.9 / 4.10	4.11 / 4.12		Report & Presentation: Tuesday
Sustainable Fuel, Engines and Emissions							
M SFEE HTE				4.6		August 14	Tuesday
M SFEE WE 1			3.9			August	Tuesday
M SFEE WE 2				4.9		August	Tuesday
M SFEE CS			3.9		4.11 / 4.12		Tuesday
M SFEE MP				4.9 / 4.10	4.11 / 4.12		Report & Presentation: Tuesday
Major project							
M MAJP MWP OE		2.9		4.9			schedule #OO
Major project							According to time schedule MES on #OO