

MASTER ENGINEERING SYSTEMS

HAN Technical Master Education

Volante Reunion – November 16th, 2019

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Do you want ...

- ... to extend your knowledge and skills on Master's (MSc) level in Engineering?
- ... to work in a (Master level) job in a company?
- ... to focus on applying your knowledge in projects?
- ... to pay no more than the standard tuition fee?

If 'yes': a HAN Technical Master
could be your choice!

HAN Technical Masters

- Master Engineering Systems (MES) with tracks
 - Automotive Systems
 - Control Systems
 - Sustainable Energy Systems
 - Embedded Systems
 - Lean Engineering
- Master Automotive Engineering (MAE)
 - Double degree Master from 5 partner universities from HAN, CTU Prague, ENSTA Brest, TUCH Chemnitz, ITB Bandung



Han MES Key Points

- MSc Degree
- Professional Masters
 - Strong practical focus (applied research)
 - For an engineering leadership role in business
 - Close cooperation with industry, institutes & research (lecturers, guest lectures, Master Advisory Council, projects with industry and research, ...)
- International focus
- English

Professional Master Versus Academic Master

Professional Master

- At a **University of Applied Sciences**
- Focused on **applying science in the professional field**
- Prepares for **job in professional field**
- MSc.
- Use of scientific (research) methods, techniques and literature

Academic Master

- At a **Research University**
- Focused on **scientific research**
- Prepares for **further study (PhD/DSc/Dr) or job in research**
- MSc.
- Use of scientific (research) methods, techniques and literature

Profile Engineering Systems



Track Modules

Tracks

Modules Systems Modelling and Applied Control

Profile Track Automotive



Vehicle Dynamics
Advanced Driver Assist Systems (ADAS)
Collision warning & avoidance
Lane keeping assistant
Brake assist
Electronic stability control

→ For cleaner, safer and smarter vehicles

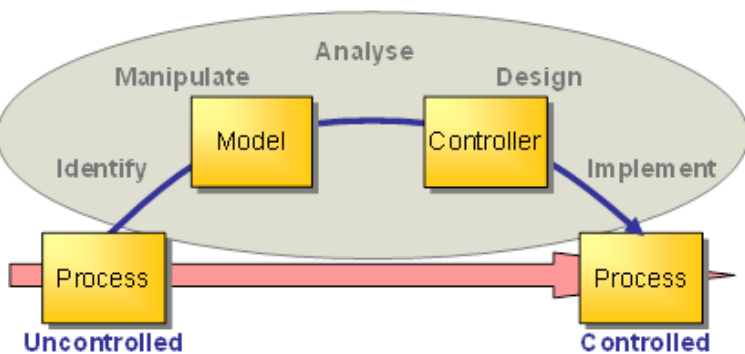
Fuel consumption
Emissions
Engines
Electrical & hybrid vehicles

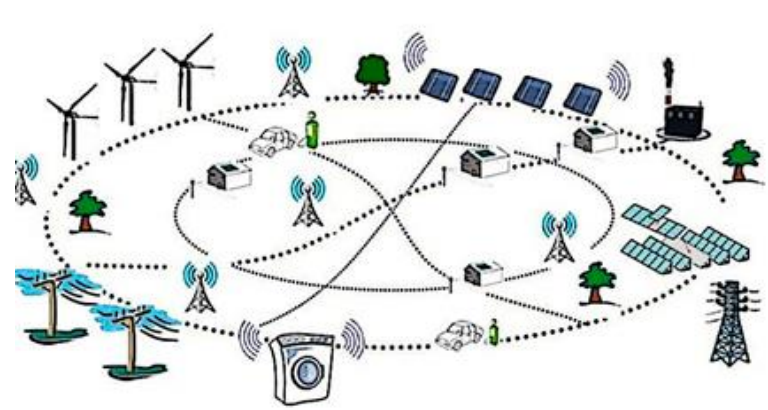


Advanced Driver Assist Systems
Intelligent mobility
Cooperative, connected and automated mobility (C-ITS)
Communication: V2V, V2I, V2X
Legal & business aspects

Profile Track Control Systems

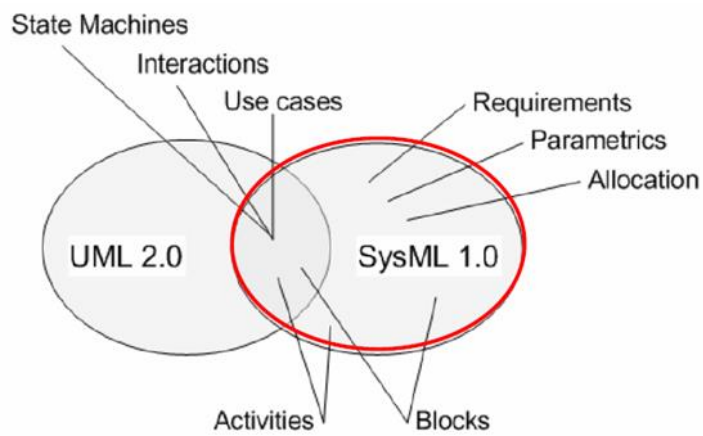
➔ For a thorough understanding of the advanced regulating systems used in today's industry as well as cutting-edge techniques that are directly applicable in an industrial environment





Profile Track Embedded Systems

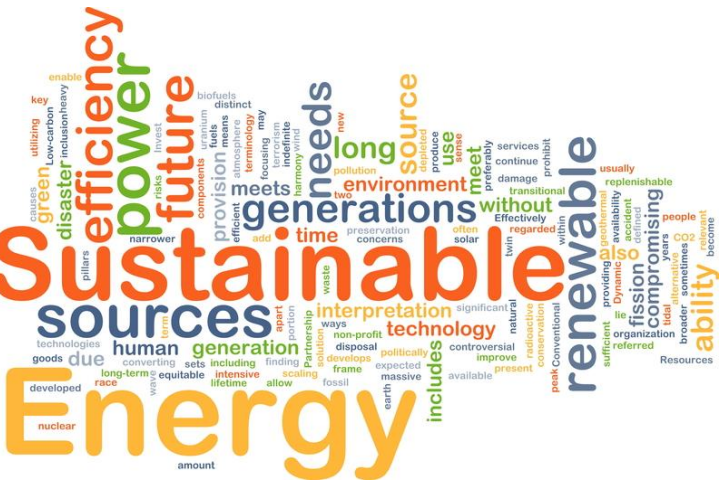
- ➔ For smart distributed systems that are low cost, energy efficient and can solve complex tasks cooperatively.
- ➔ Model and validate complex non-linear systems with multiple inputs and outputs using UML and/or SysML.

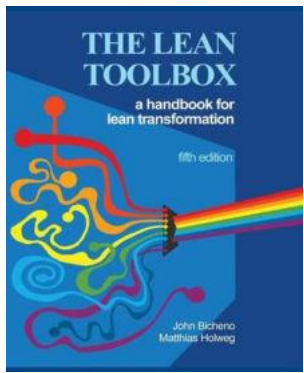




Profile Track Sustainable Energy Systems

- ➔ Sustainable and renewable energy systems for future energy requirements.
- ➔ Energy systems to work more efficiently on their own and in combination.
- ➔ Optimization of energy systems across multiple pathways and scales to increase reliability, reduce cost, and minimize environmental impact of our energy systems.





Profile Track Lean Engineering

- ➔ To deepen the knowledge of your technical bachelor.
- ➔ To use tools to improve manufacturing design and product development.
- ➔ To link technological developments with the needs of business processes.



MES Structure	Tracks				
	Automotive Systems	Control Systems	Embedded Systems	Sustainable Energy	Lean Engineering
Compulsory for all tracks (30 EC)	Systems Modelling (15 EC)				
	Applied Control (15 EC)				
Elective modules (30 EC) 15 EC per Module	Advanced Vehicle Dynamics	Advanced Controller Design	Distributed Systems	Sustainable Energy	Process Development
	Big Data & Small Data	Big Data & Small Data	Big Data & Small Data	Big Data & Small Data	Product Development
	Electric, Hybrid & Fuel Cell Powertrain			Smart Power Supplies	
	Sustainable Fuel, Engines and Emissions				
	Smart Infrastructure				
	Smart Vehicles				
Compulsory for all tracks (30 EC)	Major Project (30 EC)				

Module Videos

For short intro videos and descriptions of the modules, see:

https://www.han.nl/opleidingen_courses/master/en/automotive-systems/course-overview/modules/

Automotive Systems

Search for keywords [HAN English](#) » [International Courses](#) » [Masters Courses](#) » [Automotive Systems](#) » [Course overview](#) » [Modules](#)

Modules Master Automotive Systems

The modules offer a broad range of subjects within the field of automotive engineering. Part-time students can apply for a separate module and plan the course by module.

- [Module Systems Modelling](#)
- [Module Applied Control](#)
- [Module Advanced Vehicle Dynamics](#)
- [Module Big data and small data](#)
- [Module Electric hybrid & fuel cell powertrains](#)
- [Module Smart Infrastructure](#)
- [Module Smart Vehicles](#)
- [Module Sustainable Fuel, Engines and Emissions](#)
- [Graduation project / Major Project](#)
- [More information?](#)

Module Systems Modelling

Step 1: Process Definition
Text

Step 2: Data Flow Diagram
Graphics

Step 3: Model Equations
Mathematics

Step 4: Simulation
Software

Meet us ➔
Request a brochure ➔
Apply now ➔

Systems Modelling

Module Applied Control

Module Advanced Vehicle Dynamics

Major Project



In this project you will

DEMONSTRATE YOUR MASTER LEVEL

By

- Solving a practical technical problem for a client
- Developing and applying new knowledge
- Demonstrating the final qualifications on master level

Teaching Methods and Specialization

- Lectures, lab session, minor projects
- Practical and theoretical (research oriented)
- Interactive, flipped classroom
- International class room
- Theory application in case studies
- Graduation assignment at a company, university or research institute

Study Load and Duration

- MES: 90 EC (2550h.)
 - Full time: 1.5 year
 - Part-time: 2.5-3 year
- MAE: 120 EC (3360 h.)
 - Full time: 2 year; 1st y. in Prague, 2nd y. at HAN



Videos

Video MES



Videos modules:
<https://www.han.nl/opleidingen/courses/master/en/automotive-systems/course-overview/modules/>



Video Rollover mechanics for commercial vehicles



HAN Master | Automotive Systems | Blended Learning

Thank you for your attentions and welcome!



- Contact:

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- Info:

- https://www.han.nl/opleidingen_courses/master/en/engineering-systems/
- Open days and evenings:
<https://www.han.nl/international/english/admissions/meet-us/>