

# Automotive Mechatronics and Management

## Innovations for the Future of Mobility

Rapid developments in vehicle engineering have led to a merging of Mechanics, Electronics and Informatics fields. One cause of this is that vehicles meet customer demands through the optimal interplay of various mechanical and electronic components. Many functions in the areas of comfort, safety and efficiency are only made possible by mechatronic systems. In this context, specific expertise in the mechatronic disciplines, combined with social and business economics competences, will be central requirements of future employees and managers in the motor vehicle industry. Precisely these requirements are the focus of the new master's degree program, Automotive Mechatronics and Management.

### Career Profile

This international master's degree program meets the industry's demand for engineers who can combine complex individual components into innovative mechatronic systems with improved or completely new functions and, in doing so, think and act under consideration of qualitative and cost aspects. The fields of activity of graduates are, therefore, in the execution and management of mechatronic development projects, in the design and validation of mechatronic vehicle systems or as quality engineers in the field of quality assurance in the product development process.

### Study Focus

- Automotive Mechatronics: Understanding the architectural components along with their physical properties and their real world applications (e.g. drive train architectures, sensors and actuators, driving assistance systems).
- Automotive IT: Competences in the fields of automotive processing architectures, communication structures, Car2X, communication and embedded systems.
- Model-based engineering: Algorithms taken from traditional fields of control theory, involving predictive algorithms, implementations of Artificial Intelligence or nonstandard approaches.
- Management & Social Skills: Additional skills in the areas of innovation, quality, marketing and production management complemented by social skills competences.

### Degree

→ Master of Science in Engineering (MSc)

### Duration

→ 4 Semesters (120 ECTS)

### Admission Requirements

- Completed Bachelor's degree (180 ECTS or equivalent) in Electromechanical Engineering, Mechanical Engineering or related subject areas
- solid English language skills

### Application

→ Online, details & deadlines on [fh-ooe.at/application](http://fh-ooe.at/application)

### Admission Procedure

→ Personal interview (e.g. Skype)

### Language of Tuition

→ 100% English

### Tuition Fees

- EU/EEA citizens: 363.36 EUR per semester (plus Austrian Student Union fee).
- Citizens from non-EU/EEA countries: 726.72 EUR per semester (plus Austrian Student Union fee).
- Scholarships available.



# Curriculum

Course Name	ECTS / Semester	1	2	3	4
<b>→ Automotive Technology &amp; Mechatronics</b>					
Individual Qualification		2	2		
Vehicle Components & Driving Dynamics		4			
Current Topics in Mobility		1			
Sensors and Micro Actuators		3			
Model based Engineering		5	5	5	
New Product Development		3			
Automotive IT Systems		3	3	1	
Drive Systems and E-Mobility			3		
Drive Train Control Systems			4		
Functional Safety		1			
Driving Assistance Systems				3	
Mechatronic Systems Validation				1	
Elective Course				4	
<b>→ Management</b>					
Automotive Quality Management		1	2		
Innovation Management		3			
Production Management		3			
Market Oriented Management			2		
Management Accounting			2		
Academic working			1		
Business Law & Intellectual Property Rights				2	
<b>→ Social Skills</b>					
Intercultural Communication		2			
Intercultural Negotiation and Moderation			2		
Intercultural Leadership				2	
<b>→ Projects &amp; Master's Thesis</b>					
Company Project			3		
R&D Project				9	
Master Thesis + Final Examination					30
<b>Total</b>		<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>



With an enriching intercultural environment, supportive staff, and value placed on student feedback, the learning dynamics are exceptional. Coupled with an active social scene, the AMM program offers a comprehensive and rewarding educational experience that equips students to thrive in the automotive industry.

Amr Mousa Mohamed Mousa MSc  
AMM graduate



AMM curriculum offers the students a great opportunity to get to know pivotal aspects that are present in the automotive industry with regards to its theoretical and practical aspects.

Daniel Louback da Silva Lubanco MSc  
AMM graduate

## Practical Experience and Research

The practice-orientation of this degree program is guaranteed by cooperation with companies in the vehicle industry. Ideally, the project in the 3<sup>rd</sup> semester and the Master's Thesis are carried out for and at company.

In this regard, students receive comprehensive support from the study program during the application process and project implementation. Further, many of the professors and lecturers work in the automotive industry or closely with it.

## International Environment

This program is taught in English and the target group is a mixture of Austrian and international students. It is therefore inherently international. For all those who wish to gain further international experience, however, there is the possibility to spend the fourth semester at one of our 100 international partner universities.

## Good to Know

→ Mechatronics and vehicle manufacturing are strong points of the Upper Austrian economy! This is why the need for highly-qualified graduates in these fields will continue to grow in the future. Leading companies in the automotive industry are working closely with this degree program.



In my two internships and masters thesis I've worked on, discussed, or at least been exposed to almost every topic I studied in this program. A 90% overlap speaks volumes to the amount of constructive dialogue constantly taking place between the surrounding automotive industry and the AMM program.

Connor Samuel Pettit MSc  
AMM graduate

## Contact

### Head of Studies

→ Prof. Mag. Dr. Kurt Gaubinger

### Program Administrator

→ Martina Dietachmair

University of Applied Sciences Upper Austria  
School of Engineering  
Stelzhamerstraße 23, 4600 Wels/Austria  
+43 5 0804 43053 | sekretariat.amm@fh-wels.at