M.Sc. Textile Engineering (Textile)

We are developing composite materials for humanity's future moon base or are fighting on the front lines of the COVID-19 response with anti-viral face-masks. And these are just a few of our current focus areas.

As a Textile Graduate you will

- develop nano-composite material for high-performance textiles
- invent new fiber-reinforced plastic materials for application in aeronautics or car racing such as Formula 1
- develop advanced polymer blend technology
- design smart fibres to monitor vital signs for cardiovascular disease treatment

APPLY BY
15 January / 15 April
to secure our
Early Bird Discount!

1 Study Program, 2 Study Tracks: Choose your specialization with the **Research** or **Coursework Track**.

1st semester

Research & Coursework Track
- Control Engineering
- Machine Design Process
- Fluid Dynamics
- German Language Course

Coursework Track
- Gear and Transmission Technology
- Advanced Finite Element Methods

2nd semester

Research & Coursework Track
- High Performance Fibres
- Composites
- Research Project
- German Language Course

Electives (examples)
- Technical Textiles
- Computational Fluid Dynamics

3rd semester

Research & Coursework Track
- 12-week Internship
- Lightweight Design
- German Language Course

Electives (example)
- Technical Textiles

Research Track
- Second Research Project

4th semester

Research & Coursework Track
- Master Thesis

	M.Sc. Degree Program (RWTH)
	2 years I 120 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	VR 145 I QR 160 I AW 3.0
€	EUR 22,000 *
	English and German taught **
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500
** A1 German needed for enrollment

RWTH International Academy gGmbH
Campus-Boulevard 30 | 52074 Aachen | textile@academy.rwth-aachen.de
www.academy.rwth-aachen.de

INTERNATIONAL ACADEMY | RWTH AACHEN UNIVERSITY

M.Sc. Robotic Systems Engineering (RoboSys)

Robotic Systems Engineers create and develop innovative and intelligent robotic solutions and systems to meet today's most pressing global challenges: industrial productivity, energy efficiency, environmental responsibility, and mobility services.

As a RoboSys Graduate you will

- develop, implement and program robotic systems for different levels of autonomy
- design industrial robots that are automated, programmable, and capable to move in a dexterous workspace
- combine and apply technological skills of mechanics, electrical drives, sensor technology, and information processing to optimize systems of robots for different domains

APPLY BY
15 January / 15 April
to secure our
Early Bird Discount!

1 Study Program, 2 Study Tracks: Choose your specialization with the **Industrial** or **Academic Track**.

- Robotic Systems
- Advanced Robotic Kinematics
- Control Engineering
- Machine Learning
- Computer Science in Mechanical Engineering II
- German Language Course

Electives (example)
- Introduction to Artificial Intelligence

- Multibody Dynamics
- Computer Vision I

Electives (examples)
- Industrial Logistics
- Production Metrology
- Machine Dynamics of Rigid Systems

- Robotic Sensor Systems
- Simulation of Robotic Systems, Sensors and Environment

Electives (examples)
- Computer Vision II
- Power Electronics
- Advanced Control Systems

Industrial Track
- Internship and Master Thesis

Academic Track
- Research Project and Master Thesis

1st semester → 2nd semester → 3rd semester → 4th semester

- **M.Sc. Degree Program (RWTH)**
- **2 years I 120 ECTS**
- **B.Sc. I B.Tech. I B.Eng. 1 year work experience**
- **GRE VR 145 I QR 160 I AW 3.0**
- **EUR 22,000 ***
- **English taught**
- **Apply before 1 March (Non-EU) I 15 July (EU)**
- **Accredited by ASIIN e.V.**

* 4 Semester Installments of EUR 5,500

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M.Sc. Networked Production Engineering (NPE)

Construct the new industry 4.0. through three distinguished study tracks: Smart Factory, Additive Manufacturing, and E-Mobility Production. Prospective students can obtain technological expertise to move forward and create the latest technologies of work, material, and transport for a new, innovated future.

As a NPE Graduate you will

- establish the flexible, digital, and networked production of the future
- design, direct, and optimize production processes
- develop innovative production machines
- create systems for state-of-the-art manufacturing planning

APPLY BY
15 January / 15 April
to secure our
Early Bird Discount!

1 Study Program, 3 Study Tracks: Choose your specialization with the **Smart Factory, Additive Manufacturing** or **E-Mobility Production Track**.

1st semester

- Mechatronics and Control Techniques for Production Plants
- Laser Applications
- Model-based Systems Engineering
- Language Course

Electives (examples)
- Tribology
- Industrial Logistics

2nd semester

- Production of Electric Drives
- Embedded Systems
- Factory Planning
- Electric Mobility Components Production
- Language Course

Electives (examples)
- Advanced Software Engineering
- Control Engineering

3rd semester

- 12-week Internship

or

- 12 CP in Elective Courses

Electives (examples)
- Multibody Dynamics
- Production Metrology

4th semester

- Master Thesis

	M.Sc. Degree Program (RWTH)
	2 years I 120 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	VR 145 I QR 160 I AW 3.0
€	EUR 22,000 *
	English taught
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500

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www.academy.rwth-aachen.de

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M.Sc. Computer Aided Conception and Production in Mechanical Engineering (CAME)

CAME is designed to broaden and increase the knowledge and practical use of computer-aided simulation techniques in mechanical engineering. You can choose between two specializations – one design-oriented and one production-oriented – to best fit your career and research interests.

As a CAME Graduate you will

- design, apply and optimize cutting-edge computer modeling to the development of high-tech products
- implement computer simulation software and programs to enhance mechanical designs and production
- land top jobs in research institutes or the industry in the field of CAD, CAE, consulting and engineering

1 Study Program, 2 Study Tracks: Choose your specialization with the **Conception** or **Production Track**.

1st semester

- Advanced Software Engineering
- Advanced Finite Element Methods
- Numerical Methods in Mechanical Engineering
- German Language Course

Electives (examples)

- Practical Introduction to FEM-Software
- Fundamentals of Light Weight Design
- Tensor Algebra and Tensor Analysis for Engineering Students

2nd semester

- Continuum Mechanics
- Failure of Structures and Structural Elements
- Multibody Dynamics
- Nonlinear Structural Mechanics
- Computational Fluid Dynamics I
- German Language Course

Electives (examples)

- Finite Element Methods in Lightweight Design
- Modelling, Model Reduction and Simulation in Laser Processing

3rd semester

- Computational Fluid Dynamics II
- Simulation of Discrete Event Systems
- Production Management A
- Quality Management
- Simulation Techniques in Manufacturing Technology
- German Language Course
- Mini Thesis

Electives (example)

- Molecular Mechanics and Multi-Scale Modelling of Materials

4th semester

- Industrial Internship
- Master Thesis

	M.Sc. Degree Program (RWTH)
	2 years I 120 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	VR 145 I QR 160 I AW 3.0
€	EUR 22,000 *
	English taught
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500

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INTERNATIONAL ACADEMY | RWTH AACHEN UNIVERSITY

M.Sc. Management and Engineering in Production Systems (MME-PS)

Fuse your engineering knowledge with business skills and lead companies to success. Empower your staff with your management skills to turn their vision into reality. Unlock your business leader potential with an M.Sc MME-PS and contribute to framing the economy of the 21st century.

As an MME-PS Graduate you will

- manage engineers and cross-disciplinary employees in global teams
- optimize management control systems for yield improvement and efficient planning
- plan cutting-edge factories by selecting innovate production machines and assembly systems

APPLY BY
15 January / 15 April
to secure our
Early Bird Discount!

Expertise in **Management** & Know-how in **Engineering:** Develop your Specialization with Exciting Electives

1st semester

- Production Management A
- Manufacturing Technology I
- Machine Tools
- Quality Management
- Sustainable Development and the Global Economy

Electives (examples)

- Computational Intelligence in Engineering
- International Factory Planning
- Additive Manufacturing

2nd semester

- Production Management B
- Manufacturing Technology II
- Industrial Engineering
- Finance & Accounting
- Marketing Management

Electives (examples)

- Embedded Systems
- Production of Electrical Drives
- Battery Production

3rd semester

- Financial Management
- Human Resource Management
- International Business
- Management Accounting
- Strategic Management

4th semester

- Master Thesis

	M.Sc. Degree Program (RWTH)
	2 years I 120 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	VR 145 I QR 160 I AW 3.0
€	EUR 22,000 *
	English taught
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500

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M.Sc. Management and Engineering in Computer Aided Mechanical Engineering (MME-CAME)

Be an engineering specialist who combines mechanical engineering know-how with business skills. You will learn how to manage complex systems and conquer the challenges of smart manufacturing. Be well prepared to make digital transformation a success[1].

As an MME-CAME Graduate you will

- sharpen your competencies to work at the interface of technology and business administration
- have gained the skill set to manage and lead interdisciplinary projects and teams
- master the merging of information technologies, production facilities and machines

1 Study Program, 2 Study Tracks: Choose your specialization with the **Modelling and Simulation Engineering (MSE)** or **Digital Engineering (DE) Track**.

1st semester

- Computational Intelligence in Engineering
- Advanced Control Systems
- Management and Engineering Perspectives
- German Language Course

Electives (examples)

- Artificial Neural Networks in Structural Mechanics
- Laser Applications

2nd semester

- Marketing Management
- Intelligent Monitoring of Engineering Systems
- Artificial Intelligence and Data Analysis for Engineers

Electives (examples)

- Simulation of Discrete Event Systems
- Digital Work: Challenges and Solutions

3rd semester

- Financial Management
- Human Resource Management
- Management Accounting
- Strategic Management
- International Business

- Advanced Software Engineering
- Production Management A

4th semester

- Master Thesis

	M.Sc. Degree Program (RWTH)
	2 years I 120 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	VR 145 I QR 160 I AW 3.0
€	EUR 22,000 *
	English taught
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500

[1] An internationally oriented Double Degree study option is also available.

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M.Sc. Management and Engineering in Computer Aided Mechanical Engineering Double Degree (MME-CAME Double Degree)

You accept any challenge, are ambitious and think efficiency is key to success? Then choose the M.Sc. MME-CAME Digital Engineering Track, study at two top Universities in Engineering and Management and obtain a Double Degree from RWTH Aachen University (Germany) and IE Business School (Spain).

As an MME-CAME Double Degree Graduate you will

- have gained the skill set and competencies to work at the interface of technology and business administration
- be able to build the bridge between management goals and operational performance
- sharpen your international profile by studying this innovative program in the heart of Europe

1 Study Program, 2 Study Locations: Aachen (Germany) and Madrid (Spain)

1st semester in Germany

- Computational Intelligence in Engineering
- Quality Management
- Advanced Control Systems
- Management and Engineering Perspectives
- German Language Course

Electives (examples)

- Mechatronics and Control Techniques for Production Plants
- Laser Applications

2nd semester in Germany

- Production Management B
- Manufacturing Technology II
- International Factory Planning
- Artificial Intelligence and Data Analytics for Engineers
- Embedded Systems

Electives (examples)

- Intelligent Monitoring of Engineering Systems
- Digital Work: Challenges and Solutions

3rd semester in Spain

- Leading People and Teams
- Data Analytics for Decision Making
- Technology & Innovation Management
- Competitive Strategy
- Operations & Supply Chain Management
- Corporate Finance

(Among others)

4th semester in Spain

Choose between 6 Specialization tracks:

- **International Business**
- **Sales & Marketing**
- **Digital Business**
- **Finance & Investment**
- **Entrepreneurship & Innovation**
- **Finance Management & Control**

5th semester in Germany or in Spain

- Master Thesis

	M.Sc. Degree Program (RWTH I IE Business School)
	2.5 years I 150 ECTS
	B.Sc. I B.Tech. I B.Eng. 1 year work experience
GRE	**VR 145 I QR 160 I AW 3.0**
€	**EUR 60,000 ***
	English taught
	Apply before 1 March (Non-EU) I 15 July (EU)
	Accredited by ASIIN e.V.

* 5 Semester Installments of EUR 12,000

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M.Sc. Management and Engineering in Structural Engineering and Risk Management of Industrial Facilities (MME-CONSTRUCT)

The name says it all: Pursue a career in multidisciplinary fields of industrial facility designs and gain the skillset to become a leader in the structural design and risk management sectors.

As an MME-CONSTRUCT Graduate you will

- bring management skills to industry, public sector and non-governmental organizations
- be able to carry out site- or structure-specific risk analysis using modern tools to estimate the threat of different types of hazards
- gain the skill-set and competences to work at the interface of technology and business administration

APPLY BY
15 January / 15 April
to secure our
Early Bird Discount!

1 Study Program, 2 Fields of Study: **Management** and **Civil Engineering**

1st semester

- Structural Analysis and Computational Methods I
- Steel Structures in Industrial Applications
- Structural Dynamics
- Individualized Construction
- Strategic Technology Management
- German Language Course

Electives (example)

- Structural Control and Health Monitoring

2nd semester

- International Factory Planning
- Introduction to Soil Mechanics and Dynamics
- Design of Concrete Structures for Industrial Facilities
- Design and Detailing of Nonstructural Industrial Components and Equipment
- Risk Management and Decision under Uncertainties

3rd semester

- Probabilistic Risk Analysis in Industrial Facilities
- Project Management in the Context of Disasters
- Foundations in Emergency Management
- Earthquake Engineering and Seismic Risk Assessment
- Engineering Ethics and Responsible Decision Making

4th semester

- Master Thesis

Electives (example)

- Introduction to Research

M.Sc. Degree Program (RWTH)
2 years I 120 ECTS
B.Sc. I B.Tech. I B.Eng. 1 year work experience
EUR 22,000 *
English taught
Apply before 1 March (Non-EU) I 15 July (EU)
Accredited by ASIIN e.V.

* 4 Semester Installments of EUR 5,500

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