



## Executive Education for Engineers Part-Time Master's Programs & Certificate Courses

*Download this brochure* →



# Technology & Management Know-How

Quality Made by the Karlsruhe Institute of Technology (KIT)

## Technology Business School of the KIT

The Karlsruhe Institute of Technology (KIT) is the largest institution for research and education in Germany. Globally known for its technology expertise in German engineering, KIT is famous for its research, excellent scientific education, lifelong learning, comprehensive advanced training, and a sustainable culture of innovation.

## Continuous Education on the Highest Academic Level

The HECTOR School is the Technology Business School of the KIT named after Dr. Hans-Werner Hector, one of the co-founders of SAP AG. The school endeavors to provide professionals with state-of-the-art technology expertise and management know-how in part-time education formats. With Executive Master Programs, Certificate Courses, and Customized Partner Programs, the HECTOR School fosters lifelong learning approaches of its industry partners and the executive development of its graduates.

## Your Success is Our Vision

The HECTOR School strives for sustainable and continuous education on the highest academic level, building on more than 10 years of experience. The growing need for qualified engineers, computer scientists, and economists demonstrates HECTOR School's vision: sustainable success of our graduates & their companies.

\*Current rankings prove the quality of KIT, e.g.:



In times of transformation of entire business areas, whether through the possibilities of new digitalization technologies or the major social issues such as climate change and necessary CO<sup>2</sup> reduction, it is central for companies and employees alike to integrate needs-based training formats into the development strategy.

For more than 15 years, KIT's HECTOR School has been a strong partner in bringing current topics from research to teaching for professionals at the highest level. It is important to us that you are able to combine your professional and academic challenges in the best possible way and that we make you fit for future technology decisions in your industry together with the necessary management skills.

**Dr.-Ing. Judith Elsner**

Managing Director HECTOR School



# Holistic Educational Approach at a Top Ranked Research University

## Executive Education @HECTOR School

### Technology Transfer & Innovation

from the  
internationally  
renowned  
university -  
the KIT.

### Power of Networks

benefit from a  
comprehensive professional  
network of academemics  
and industry partners  
worldwide.

### Part-Time Programs

allow for simultaneous  
work and study for  
participants and their  
companies.

### Management & Engineering

combined makes  
our programs  
unique

and ensures  
long term  
sustainability and  
competitiveness.

## REASONS

for the Technology  
Business School of the KIT

## HECTOR SCHOOL

OF ENGINEERING & MANAGEMENT

### Executive Master of Science Programs Combining Engineering & Management Know-how

Energy Engineering and Management | Financial Engineering | Information Systems Engineering & Management |  
Management of Product Development | Mobility Systems Engineering & Management |  
Production & Operations Management

## HECTOR SCHOOL

ACADEMY OF FURTHER EDUCATION

### State-of-the-Art Technology Expertise in Compact Education Formats

Customized Qualifications for Companies | Adaptive Further Education Programs | Module Selection |  
Certificate Courses | Management Impuls | MBA Fundamentals Program

# A Strong Cooperation with Industry

Lifelong Learning Programs Stimulate Innovation and Competitiveness



## Challenges for Industry

There are numerous challenges for the industry: A shortage of specialists and managers, demographic changes, globalization and working across time zones, permanent accessibility for customers, and the changing values and lifestyles of working people. These factors present companies with new challenges for ensuring long term employee retention and to attracting new talent.

## Challenges for Employees

Companies today are subject to ever faster-moving change than they were just a few years ago. Markets are global, technologies in production, energy and automation are advancing constantly and at a rapid pace. This also means that professionals have to keep moving in order to remain attractive as employees. This implies not only always being up to date in one's own specialist field, but also demonstrating flexibility and facing up to new demands.

## Benefits for Industry and Employees

The solution to these modern challenges can be found in a lifelong learning approach in which professionals can optimize their skill set and utility through further education programs. Likewise, lifelong learning is a key factor for companies in human resource development and retention.

The advantages of lifelong learning programs in cooperation with universities, given a highly academic yet practically oriented approach, are manifold:

## Technology Transfer & Innovation

Industries benefit from state-of-the-art research at the KIT. HECTOR School program participants are instructed at the highest academic level. They will act as interfaces between their companies and the KIT. The Master thesis is often the start of an intensive cooperation through joint innovation projects.

## Management & Technology

Equipped with scientific methods and state-of-the-art knowledge in their field of technology expertise, combined with management and digitalization know-how, participants develop the creativity and innovative potential of their company. Furthermore, professionals prepare themselves for future career in executive positions.

## Power of Networks

In times of global and cross-linked markets, a network of international peers is indispensable. The HECTOR School graduates will gain valuable contacts within KIT and an extensive professional network of alumni worldwide.

## Part-Time Programs

The HECTOR School programs allow to gain high-level academic further qualification while being able to work at the same time. Due to the part-time approach, professionals can continue their challenging careers.

# Further Training and Qualification of Employees Are Central Success Factors

»Digital transformation requires establishing a fundamental shift in strategy. It is imperative for all processes to integrate stakeholders into these dynamic processes. The further training and qualification of employees are central success factors driving this digital change.

As a partner, the HECTOR School provides valuable support in the continuous training of our employees and fosters technological know-how and innovative potential, ensuring for a successful internal and external digitalization.«

**Klaus Helmrich**

Chairman GEA Group Aktiengesellschaft



**ABB AG • Alcatel-Lucent Deutschland AG • Alcatel Transport Solutions Deutschland GmbH • Alten Technology GmbH • Audi AG • Balluff GmbH • BASF IT Services GmbH • BASF SE • BBBank eG Bearing Point GmbH Behr-Hella • Thermocontrol GmbH • Blohm+Voss Nordseewerke GmbH • BMW Group • Bombardier Transportation GmbH • Bosch Rexroth AG • Brose Fahrzeugteile SE & Co. KG • Continental AG • DAIMLER AG • DB Fernverkehr AG • DB ProjektBau GmbH • Deloitte Touche Tohmatsu Limited • DZ Bank AG • Eisenmann SE i. Ins. • El-Khayyat • ELO Digital Office GmbH • EnBW • Endress + Hauser AG • Enpower Energy Corp. • EUROHYPO AG • EvoBus GmbH • Festo SE & Co. KG • FFG Europe & Americas • Fine Hygienic Paper Co. Ltd/ Nuqul Group • Hewlett-Packard GmbH • Hikma Pharmaceuticals PLC • Howaldtswerke-Deutsche Werft GmbH • IBM Deutschland GmbH • Karl Dungs GmbH & Co. KG • Knorr-Bremse AG • KPMG AG • KSB SE & Co. KGaA • Landesbank Baden-Württemberg (LBBW) • Lufthansa Technik AG • MAHLE Behr GmbH & Co. KG • Mahle GmbH • MAN Truck & Bus SE • MBtech Consulting GmbH • MELEC GmbH • Melexis GmbH • MERCEDES-BENZ AG • MiRO Mineraloelraffinerie Oberrhein GmbH & Co. KG • Navistar, Inc. • NXP Semiconductors. • OBE, Ohnmacht & Baumgärtner GmbH & CO KG • P3 GROUP GMBH • Porsche AG • PROMATIS software GmbH • Reuters AG • Robert Bosch GmbH • Rolls-Royce Power Systems AG • SAMARCO Brazil • SAP SE • SAS Autosystemtechnik Verwaltungs GmbH • Schaeffler Technologies AG & Co. KG • Schuler AG • SEW-EURODRIVE GmbH & CoKG • Sick AG • Sictel s.r.l. • Siemens AG • Sparkasse Karlsruhe • Staufen AG • Telekom Deutschland GmbH • Thales Group • thyssenkrupp Marine Systems GmbH • thyssenkrupp rothe erde Germany GmbH • ThyssenKrupp Technologies AG • TI Fluid Systems • T-Systems International GmbH • Unilever • Vale S.A. • Verband der Deutschen Bahnindustrie (VDB) e.V. Vibracoustic SE • Volkswagen AG • WMF Group GmbH • WSP Global Inc. • XING AG • Ziehl-Abegg SE • Zwick GmbH & Co. KG**

Portrait of the



HECTOR School

# Executive Master of Science Programs

Cutting Edge Technology Combined with the Latest Management Expertise



## Part-Time Master's Programs for Professionals

Your Next Step in a Successful Career

### Six Executive Master of Science Programs

The HECTOR School offers six part-time master programs designed for professionals in leading positions. The Master's programs differ from the typical MBA program as they combine management with engineering expertise. The primary goal is to enable professionals to take a holistic approach when managing highly interdependent processes. All programs are completed with a Master of Science degree from the Karlsruhe Institute of Technology (KIT).

### Leadership Know-How for Engineers

All programs share five management modules providing the participants with general knowledge in finance, accounting, marketing, international multi-project management, international law, human resource management or innovation management. Therefore, they can forecast the commercial implications of project decisions.

### Technology Expertise: More Than Just an MBA

In addition to the management modules, five engineering modules in each specialization convey state-of-the-art technology know-how and the methodology necessary to master the scope of new technologies.

### Acquire Competencies to Succeed with Digitalization

Products, services and processes are translated into a digital representation – aiming higher productivity and efficiency. To fulfill this, corporate divisions are asked to develop a systematic and holistic approach for the increased use of digital components. All Master's programs consider digitalization on a comprehensive level.

### Part-Time Structure for Professionals

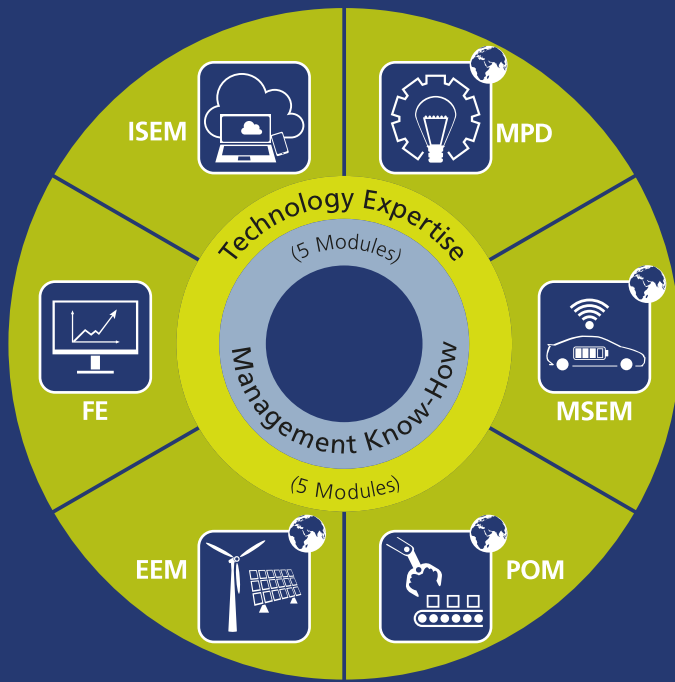
The academic calendar for the Master's programs starts annually in October. It consists of 10 modules, each with a duration of 10 days. Intermittent periods of lectures are scheduled to allow participants to continue with their demanding careers whilst acquiring new skills.


All Master's programs are taught in English. They are completed within approximately 20 months. Workshops and case studies provide ample opportunities to explore the direct applications of the module contents simulating a real business environment.

### Master Thesis as an Innovation Project

The Master thesis allows participants to work independently, reflecting their own company's individual critical needs and their specific business environment. Companies and participants have the unique opportunity to establish innovation projects in the framework of a Master thesis. Through this, companies profit from an outstanding added value with consultation by KIT professors.





 = including module at another international location

### Master's Programs

- EEM** Energy Engineering & Management
- FE** Financial Engineering
- ISEM** Information Systems Engineering & Management
- MPD** Management of Product Development
- MSEM** Mobility Systems Engineering & Management
- POM** Production & Operations Management

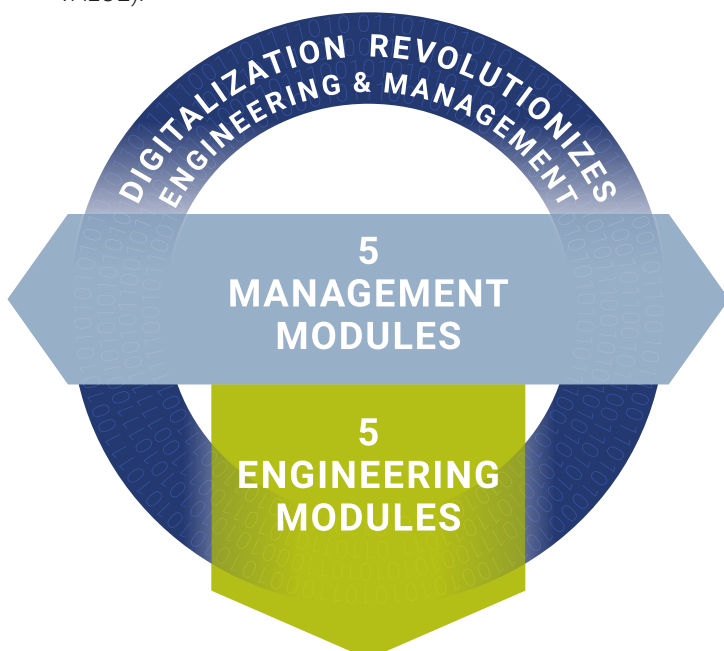
All Master's Programs share five management modules conveying the latest theories and methods in management. Participants from different branches and international locations can exchange their expertise, discuss current technological and commercial challenges from different viewpoints and build up a sustainable network of peers.

## Management Modules

Within all Master's Programs

### Big Picture Management Modules

Management is becoming increasingly complex and networked in data-driven companies (INFORMATION). Therefore, engineers and managers must obtain a holistic understanding of all corporate divisions to be able to make complex decisions (DECISIONS & RISK) in a future and result-oriented manner (INNOVATION & PROJECTS) from the perspective of the market (MARKETING), the employees (STRATEGY & PEOPLE), and the company (FINANCE & VALUE).



### Co-Program Directors Management Modules



#### Prof. Dr. Stefan Nickel

Institute of Operations Research, KIT  
Master's Program EEM, MSEM, POM

#### Prof. Dr. Martin E. Ruckes

Institute of Finance, Banking, and Insurance, KIT  
Master's Programs FE, ISEM, MPD

### Management Modules

- MM 1** Marketing & Information
- MM 2** Finance & Value
- MM 3** Decisions & Risk
- MM 4** Innovation & Projects  
Corporate Innovation and Entrepreneurship (EEM, MSEM) 
- MM 5** Strategy & People

# Six Master of Science Programs (M.Sc.)

## M.Sc. in Management of Product Development (MPD) Agile Engineering of Mechatronic Systems



»Product development is the driver of innovation. In MPD, you learn to manage product development in an efficient, methodical, creative and success-oriented way. With the scientifically sound and practice-oriented training program for professionals, you become qualified to be the driving force for successful product innovation in your company.«

**Prof. Dr.-Ing. Dr. h.c. Albert Albers**

Institute of Product Engineering, KIT | Program Director MPD

### Engineering Modules

- EM 1** Integrated Product Development by ASD – Agile Systems Design
- EM 2** Design & Validation Process and Information Systems for Product Development (PD)
- EM 3** Simulation and Target Values in PD
- EM 4** Validation and Verification in PD
- EM 5** Tools and Methods of Product Engineering →

## M.Sc. in Production & Operations Management (POM) Global Production, Digital Transformation in Supply Chain Management and Logistics



»The design and operation of production systems and supply chains is undergoing a rapid change. Driven by new technology, as reflected by industry 4.0, the education of the past is no longer sufficient to guide companies through the changes.

A master in POM equips participants with the necessary competences, bridging the gap between up-to-date theories and advanced technologies.«

**Prof. Dr.-Ing. Kai Furmans**

Institute for Material Handling & Logistics, KIT | Academic Director of the HECTOR School and Program Director POM

### Engineering Modules

- EM 1** Collaborative Engineering in Production and Operations Management
- EM 2** Digital Engineering Ecosystems
- EM 3** Modern Operations Management for Supply Chain Networks
- EM 4** Networks of Supply & Production Systems
- EM 5** Global Production & Distribution Systems →

## M.Sc. in Mobility Systems Engineering & Management (MSEM) E-Mobility, Autonomous Driving & Systems Engineering



»The Master Program MSEM offers a unique combination of courses in emerging technologies & systems engineering. Processes, methods and tools for the challenges of future mobility in e-drive, autonomous driving, communication-over-

the-air, and worldwide release & configuration management are introduced on the engineering as well as on the management side.«

**Prof. Dr.-Ing. Eric Sax**

Institute for Information Processing Technology, KIT | Program Director MSEM

### Engineering Modules

- EM 1** Processes, Methods & Tools of Systems Engineering
- EM 2** Systems Design
- EM 5** Systems Integration & Validation

Specialization Advanced Driver Assistance Systems (ADAS)

Specialization E-Mobility

- |   |   |
|---|---|
| <b>EM 3</b> Functions of ADAS                 | <b>EM 3</b> E-Mobility: Political & Technical Framework |
| <b>EM 4</b> Components & Technologies of ADAS | <b>EM 4</b> E-Mobility: Components & Technology         |



# Expand Career Opportunities via Developments in Digitalization and Globalization for Product Innovation, Logistics, Mobility, Energy, Finance, and Industry 4.0

## M.Sc. in Energy Engineering & Management (EEM) Future Energy Systems and Technologies



**Program Directors EEM:**  
**Prof. Dr.-Ing. Marc Hiller**  
 Institute of Electrical Engineering, KIT  
**Prof. Dr.-Ing. Dimosthenis Trimis**  
 Engler-Bunte-Institute, KIT

»The energy transition is associated with many challenges, such as an increase in efficiency of energy conversion systems based on renewable energies and their integration into future energy systems. This requires e.g. the development of capable energy storage systems and an intelligent demand side management. EEM covers all these aspects and provides the skills to successfully face the challenges.«

### Engineering Modules

- EM 1 Renewables
- EM 2 Thermal Energy Conversion
- EM 3 Electricity Generation & Energy Storage
- EM 4 Smart Networks & Energy Distribution
- EM 5 Energy Economics

## M.Sc. in Financial Engineering (FE) Data Science, Machine Learning, and Predictive Analytics



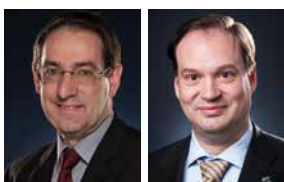
**Program Directors FE:**  
**Prof. Dr. Martin E. Ruckes**  
 Institute of Finance, Banking, and Insurance, KIT  
**Prof. Dr. Maxim Ulrich**  
 Institute of Finance, Banking, and Insurance, KIT

»Building more accurate models reduces uncertainty around future events and paths the way to better decision making. A mix of broad decision-making applications, sound data and modeling work, paired with an entrepreneurial drive to solve innovation challenges using modern software and financial thinking makes Financial Engineering unique.«

### Engineering Modules

- EM 1 Digital Financial Markets
- EM 2 Financial Economics for Data Scientists
- EM 3 Machine Learning for Data-Driven Decision Making
- EM 4 Engineering Aspects of Financial Markets
- EM 5 Alternative Data and Machine Learning for Business Applications

## M.Sc. in Information Systems Engineering and Management (ISEM) Digital Transformation of Products, Services, and Organizations



**Program Directors ISEM:**  
**Prof. Dr. Andreas Oberweis**  
 Institute of Applied Informatics and Formal Description Methods, KIT  
**Prof. Dr. Ralf Reussner**  
 Institute for Program Structures and Data Organization, KIT

»Digitalization enables new business models, creates new service opportunities and redefines existing products. This transforms our economy towards software realized added values in an unprecedented way. Hence, the capabilities of efficiently developing high quality software are becoming crucial for nearly for all enterprises. In our Master's program accordingly we concentrate on software engineering, software quality, in particular security, cloud service engineering and AI.«

### Engineering Modules

- |      |                                 |                |                     |
|------|---------------------------------|----------------|---------------------|
| EM 1 | Digital Platforms               |                |                     |
| EM 2 | Software Engineering            |                |                     |
| EM 3 | Process & Knowledge Engineering |                |                     |
| EM 4 | Security & Privacy Engineering  |                |                     |
|      | Specialization                  | Specialization |                     |
| EM 5 | Digital Services                | EM 5           | Autonomous Robotics |

# Key Facts

Part-Time Master's Program, English-Taught, Duration of 20 Months



## Job-Compatible Format and an Ideal Work-Study Balance

Part-Time, English-Taught, Duration of 20 Months

### Academic Degree

Master of Science (M.Sc.) from the KIT

### Accreditation

The KIT is system-accredited by AAQ.

All HECTOR School master programs are accredited by the internal quality assurance system of the KIT.



### Admission Requirements

A first academic degree: e.g. Bachelor, Master or Diploma

At least 1-2 years work experience (depending on the level of the first degree, recommended > 3 years)

If English is not your mother tongue nor has it been the language of instruction for the last five years, language proficiency is required, e.g. test certificate (e.g. TOEFL score of at least 570 PBT; 230 CBT; 90 iBT or IELTS at least 6,5 points) or appropriate proof of C1 level.

### Program Structure

Part-time, 10 x 2-week modules

Duration of approx. 20 months

Master thesis = project work in the company

5 Engineering and 5 Management Modules

Teaching language: English

Yearly program start: October

# Job-Compatible Format and an Ideal Work-Study Balance

September 2024							October 2024							November 2024							December 2024								
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
						01		01	02	03	04	05	06					01	02	03							01		
02	03	04	05	06	07	08	07	08	09	10	11	12	13	04	05	06	07	08	09	10	02	03	04	05	06	07	08		
09	10	11	12	13	14	15	14	15	16	17	18	19	20	EM1	12	13	14	15	16	17	09	10	11	12	13	14	15		
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22		
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	23	24	25	26	27	28	29			
MM1																					30	31							
January 2025							February 2025							March 2025							April 2025								
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
		01	02	03	04	05						01	02						01	02		01	02	03	04	05	06		
06	07	08	09	10	11	12	03	04	05	06	07	08	09	03	04	05	06	07	08	09	07	08	09	10	11	12	13		
MM2	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20		
20	21	22	23	24	25	26	EM2	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27		
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30	28	29	30						
														MM3															
May 2025							June 2025							July 2025							August 2025								
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
			01	02	03	04							01			01	02	03	04	05	06						01	02	03
05	06	07	08	09	10	11	02	03	04	05	06	07	08	07	08	09	10	11	12	13	04	05	06	07	08	09	10		
EM3	13	14	15	16	17	18	09	10	11	12	13	14	15	EM4	15	16	17	18	19	20	11	12	13	14	15	16	17		
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24		
26	27	28	29	30	31		23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31		
							30																						
September 2025							October 2025							November 2025							December 2025								
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
01	02	03	04	05	06	07			01	02	03	04	05						01	02	MM5	02	03	04	05	06	07		
MM4	09	10	11	12	13	14	06	07	08	09	10	11	12	03	04	05	06	07	08	09	08	09	10	11	12	13	14		
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21		
22	23	24	25	26	27	28	EM5	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28		
29	30						27	28	29	30	31			24	25	26	27	28	29	30	29	30	31						

	Welcome Event
	Management Modules
	Engineering Modules
	Exams

Please note: Dates are subject to change.

The academic calendar for each program starts annually in October. It consists of 10 modules, each with a duration of 2 weeks.

All programs conclude with a **Master Thesis**:

>> 9 months project work **MPD, POM, MSEM, EEM**

>> 6 months project work **ISEM, FE**

# Intake 2024

Project Work on Master Thesis	Regular	Earliest
<b>Start</b>	January 1, 2025	November 1, 2024
<b>Completion by</b>	June 30, 2025	April 30, 2025
<b>Completion by</b>	September 30, 2025	July 31, 2025

**Time Schedule Thesis**

You can start your thesis earliest after completing 8 modules. Latest start of your thesis is after your 10<sup>th</sup> module. The thesis must be completed after 6 months for ISEM and FE, and after 9 months for MPD, POM, MSEM and EEM.



# Internationality is Key

Benefit From a Vivid Intercultural Exchange



## Become Part of a Strong Global Multi-Industry Community

### **International Orientation for Global Success**

During your time at the HECTOR School, you will advance in the three dimensions of technology knowledge, management skills and personal development. In addition to the professional topics taught at the HECTOR School, the international environment plays an essential role. Grow professionally and interpersonally together with your fellow students. Experiences from working in different countries and industries and cross-cutting projects will enrich your use cases during your studies - and your entire future working life.

### **Experience the World Through Global Modules**

To provide our participants with global relevant internationality and insights from experts in their field, some of the Master's programs include a module abroad.

### **Get Insights Into the World's Most Emerging Economy: China**

Global production structures, mechanisms and networks are shaping more and more industries. China in particular is a gigantic and diverse market with enormous dynamism - but also full of its own challenges. At the KIT spin-off Global Advanced Manufacturing Institute (GAMI) in Suzhou Industrial Park, near Shanghai, participants of the Master's program „Management of Product Development“ and „Production and Operations Management“ will have the opportunity to experience the development of industry 4.0 and AI.

### **Get Inspired by Innovations From the ESADE Business School in Spain**

The Business School ESADE (Escuela Superior de Administración y Dirección de Empresas) in Barcelona is ranked among the best in Educational Experience, Entrepreneurship and Professional Development. In the Management Module „Corporate Innovation & Intrapreneurship“ of the Master's programs „Energy Engineering and Management“ and „Mobility Systems Engineering and Management“, innovation is viewed as a holistic system. Participants benefit from the first-class innovation forge and grow even closer together through their stay in Spain.

### **Global Network of Industry Partner & Peers**

HECTOR School participants come from all over the globe. This fosters intercultural exchange with other professionals. Due to the holistic approach HECTOR School participants share the management modules with peers from different industries and backgrounds. This guarantees a worldwide and interdisciplinary network lasting a lifetime.

After graduation, the HECTOR School offers a professional network with alumni activities, reaching from social media channels to alumni meetings in cooperation with exclusive industry partners.

# Become a HECTOR School Master

Leadership Know-How for Demanding Careers



»I have lively memories of my application interview for the HECTOR School and Prof. Kai Furman's promise: „We will make you push your limits.“ An inspiring international environment, people from different industries and working fields, and the link to a state-of-the-art understanding of production and logistic systems provided me with a solid basis for the progression of my professional career. A challenging and enriching experience – promise kept!«

**Stefan Oehmke**  
Master in Production & Operations Management  
EVP Business Unit DRIVE Solutions at Vibracoustic SE & Co. KG



»Studying at the HECTOR School was exactly the right decision. Besides the studies themselves, the network makes the HECTOR School unique. Through the studies, new friendships have formed and even years later you have the opportunity to be connected through the alumni program and always meet new, exciting people. In the meanwhile, my co-workers are studying at the HECTOR School.«

**Britta Daffner**  
Master in Information Systems Engineering and Management (former SME)  
Practice Leader, Data & Technology Transformation at IBM



# HECTOR School Academy

Lifelong Learning Partner with Compact Qualification Formats



## Tailor-made Further Education programs

For Managers, and Engineers

Customized lifelong learning solutions form one of the key competencies of the HECTOR School. Paradigm shifts in technology call for high-end trainings for engineers. Engineers in all industries need a regular update in state-of-the-art technology expertise to secure their personal career path as well as the future technology development of their companies.

The HECTOR School Academy addresses these needs and provides programs to equip employees with specialized training in their specific field.

Companies master the digital transformation with current know-how from a world class university. Further, small groups offer a strong knowledge growth and enhance team building.

With customized trainings for companies lifelong learning is settled. In addition, current scientific expertise in new technologies is taught in a practical way. This is implemented by means of didactics appropriate for adults.

Modern class rooms and living labs: Our further qualification programs combine theoretical and practical elements.

It is crucial to guarantee a high level of planning security for all participants in order to ensure that the demanding further qualification is compatible with the demanding professional environment.

The entire portfolio of the HECTOR School Academy is based on the currently relevant areas of energy, digitalization, industry 4.0 and mobility.



»The qualified colleagues are all very contented and dedicate themselves with great enthusiasm and motivation to their mostly new tasks. The imparting of the professional knowledge at the HECTOR School as well as the perfect organization took a major part in this. We also appreciate very much the constant and open exchange with the team«

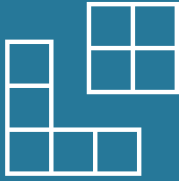
**Dr. Philippe Gorse**

Director Fuel Cell Solutions at Rolls-Royce Solutions GmbH

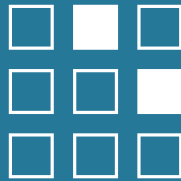
**Customized Qualifications**



**Adaptive Further Education Programs**



**Module Selection**



**Certificate Courses**



**Management Impuls**



**MBA Fundamentals**



	Customized Qualifications	Adaptive Further Education Programs	Module Selection	Certificate Courses	Management Impuls	MBA Fundamentals
Target Group	Companies that want to realign projects, teams and departments	Engineers, mechanical engineers, computer scientists	Engineers, mechanical engineers, computer scientists	Engineers, mechanical engineers, computer scientists	Upper management	Natural scientists who are pursuing a PhD or having recently started their professional life
Duration	Customizable with a recommended 3-phase setup of 1-2 weeks per phase	2 days per course	2 weeks	3-5 days	1-2 days	5 days per unit
Group Size	Customizable with a recommended 15-20 people	10-25 participants	5-25 participants	5-15 participants	5-10 participants	10-25 participants
Language	English or German	English; individual company requests for lectures in German can be considered	English	English; individual company requests for lectures in German can be considered	English or German	English
Certificate	KIT and HECTOR School certificate after participation. Exam and ECTS credits are available upon request	KIT and HECTOR School certificate after participation. Exam and ECTS credits are available upon request	KIT and HECTOR School certificate after participation. Exam and ECTS credits are available upon request	Certificate from the Karlsruhe Institute of Technology (KIT), correlation: 1-3 ECTS	KIT and HECTOR School certificate after participation	MBA Fundamentals Certificate from Karlsruhe Institute of Technology (KIT)
Extensions	Master's programs, Management Teaser	The courses are creditable to the corresponding master program	The courses are creditable to the corresponding master program	-	-	Credit points earned in this MBA Fundamentals Program are recognized in international MBA programs
Cost	Individual offer on request	850 EUR per participant per 2 day course	3,500 EUR per participant per module	2,495 EUR per participant per 3 day course 3,500 EUR per participant 5 day course	Individual offer on request	2,750 EUR per participant per unit

## Customized Qualifications for Companies



### Companies and employees in the process of change

Through a forward-looking re-qualification of engineers, the HECTOR School Academy supports companies with the Customized Qualification program in the transformation process. It focuses in mastering challenges in the KIT areas of expertise: energy, information, and mobility systems. This bond ensures that the participants receive exclusive access to the latest trends in technology and innovation.

Companies are enabled to accelerate the change process with a customized further education approach. The targeted continuing education guarantees a high degree of planning security and a direct transfer into the company.

The HECTOR Schools close cooperation with industry guarantees that the methods taught out in the courses are relevant and pertinent to the needs of the modern workforce.

### ■ Topics

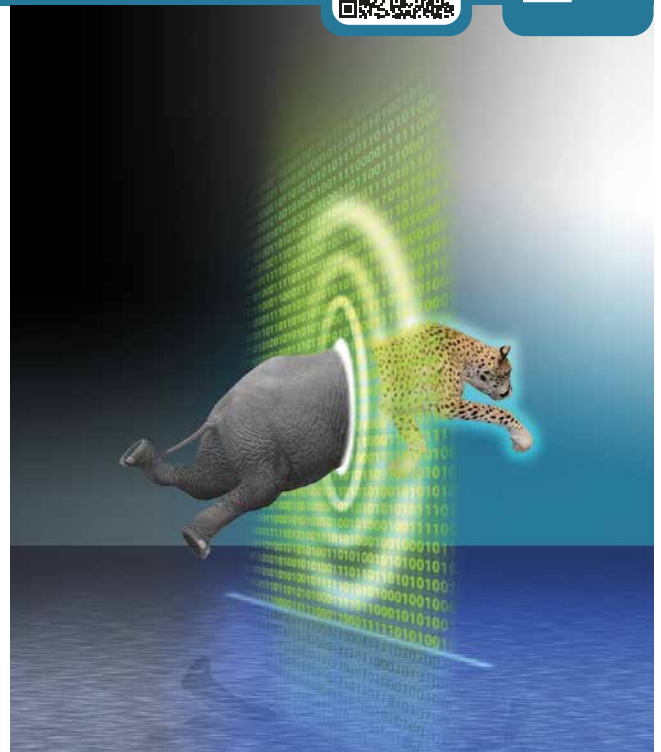
The industry is shifting in general – the HECTOR School Academy leads companies and their employees through these dynamic changes. Encounter solutions to modern day challenges in e-mobility, renewable energies, global production with Industry 4.0 components, and digital transformation.

### ■ Methodology

Intensive exchange with lecturers on specific technical topics, together with a classification of these topics into wider contexts to ensure high acceptance and learning success.

### ■ Structure

Most Customized Qualifications for Companies follow a three-phase approach: 2 to 3 weeks Basic, followed by 1 to 2 weeks Specialization can be finalized by the Master's program for the experts (approx. 20 months).



### Best Practice Workflow for Your Transformation Projects

#### Experts

e.g. the top 10% will gain additional knowledge in engineering and management topics to lead the digitalization process in the company.

#### Specialization

e.g. 80% of the basic phase attendees will get further insights to implement the transformation process.

#### Basic

e.g. a selected group of engineers will be trained in current scientific know-how on new technologies.



## Adaptive Further Education Programs



### Select courses that meet your professional development needs, in best complement your current skill set

Choose from courses such as driver assistance systems, e-mobility, digital services, autonomous robotics and more.

Understand autonomous and semi-autonomous vehicle systems and the challenges of intelligent systems. Experienced lecturers provide insights into future technologies of this current topic. Gain hands-on experience in our online platooning workshop to experience the latest mobility concepts while learning how to integrate software to control vehicle systems or how to set up an autonomous test drive.



## Module Selection



### Customize your learning experience through selectable modules

Through two week modules participants acquire the latest knowledge on exactly the topics that interest them. Select individual modules from a Master's degree program and quickly acquire the skills and competencies you need.

#### 38 topics are available to you!

##### Five topics from Management:

Marketing & Information, Finance & Value, Decisions & Risk, Innovation & Projects, Strategy & People

##### Five topics from Production and Operations Management:

Collaborative Engineering in Production and Operations Management, Digital Engineering Ecosystems, Operations Research: Decision Making with Discrete and Nonlinear Models, Networks of Supply and Production Systems, Global Production and Distribution Systems

##### Six topics from Information Systems Engineering:

Digital Platforms, Software Engineering, Process & Knowledge Engineering, Security & Privacy Engineering, Digital Services, Autonomous Robotics

##### Five topics from Financial Engineering:

Digital Financial Markets, Financial Economics for Data Scientists, Machine Learning for Data-Driven Decision Making, Engineering Aspects of Financial Markets, Alternative Data and Machine Learning for Business Applications



##### Three topics from Mobility Systems Engineering:

Processes, Methods and Tools of Systems Engineering, Systems Design, Systems Integration and Validation

##### Two topics from Advanced Driver Assistance Systems (ADAS):

Functions of ADAS, Components and Technology of ADAS

##### Two topics from E-Mobility:

Political and Technical Framework, Components and Technology

##### Five topics from Energy Engineering:

Engineering Principles, Renewables, Thermal Energy Conversion, Electricity Generation & Energy Storage, Smart Networks & Energy Distribution, Energy Economics

# HECTOR SCHOOL

## ACADEMY OF FURTHER EDUCATION

### Certificate Courses



#### Compact Part-Time Education Formats

In compact 3- to 5-day seminars, professionals get updated with technology expertise directly derived from the latest KIT research. On a high academic level and yet practically oriented, the Certificate Courses qualify engineering professionals in current technology issues. The seminars are offered in four highly topical fields of technology.

#### International Certificate Courses

In order to provide first-hand insights into specific technological environments and to foster intercultural exchange, the Certificate Courses are not only offered in Germany, but also at various international locations (e.g. in Suzhou/ China).

Organized in cooperation with partner institutions worldwide, HECTOR School equips engineers with high-level special expertise. Current research know-how is conveyed to the participants by using a smart combination of lectures and case studies, either on- or off-site.

#### Exemplary Fields of the Certificate Courses:

The indicated courses serve as examples. The HECTOR School also offers customized seminars upon request and regularly updates the range of courses.



#### Industry 4.0

- Smart Manufacturing & Automation with Industry 4.0
- Quality & Supplier Management in China
- Systems & Software Engineering

#### Digitalization

- Internet of Things: Modern Network Infrastructures
- Information & Knowledge Management
- Digitalization of Service Systems
- Data Science

#### Mobility

- Technology of Hybrid & Electronic Vehicles
- Digital Signal Processing
- Integrated Photonics
- Charging & Energy Management

#### Energy

- Renewables Generation & Grid Integration
- Battery Technology
- Electrical Engineering
- Fuel Cell

### Management Impulse



#### Your challenges are our standards

With HECTOR School's Management Impulse, it's now easier to pioneer new technologies and bring employees along for the ride. By working with top researchers and experienced industry experts, we provide the latest updates in technology.

This is how we support executives to create the best possible technology change in their companies. What are the next challenges in the areas of energy transition, digital transformation, globalization, product innovation and automation? - And how do you solve them? With us, you become a thought leader in technology in your company and design your own roadmap.



## MBA Fundamentals Program



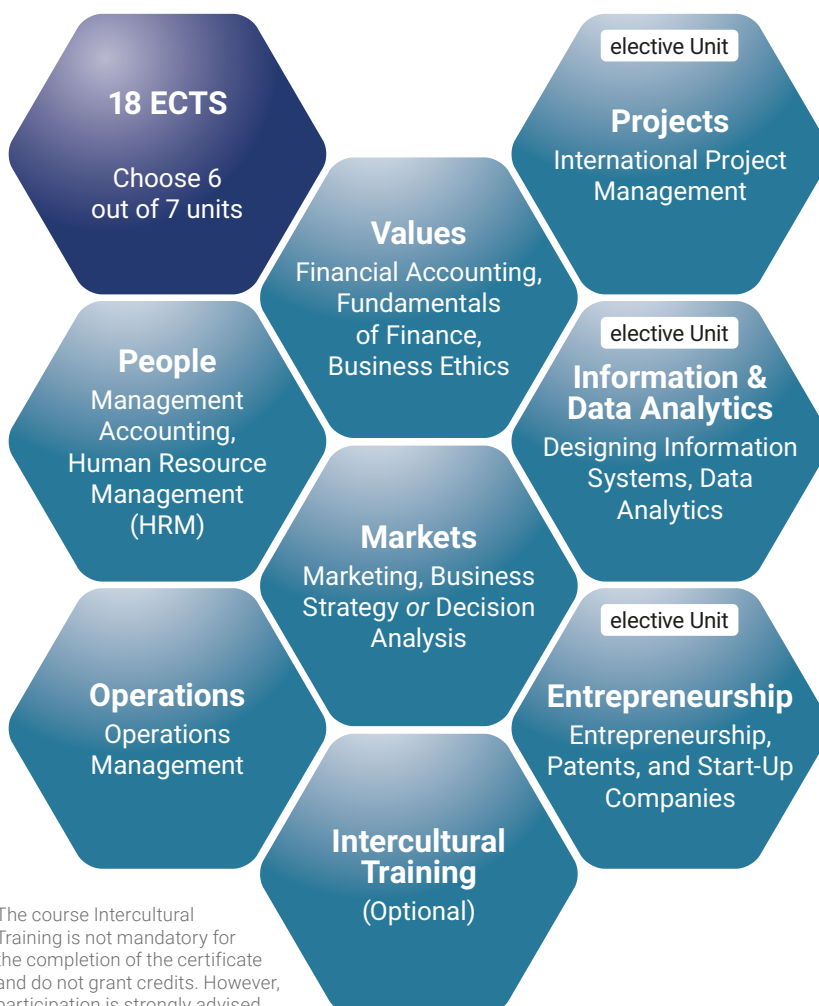
### MBA Fundamentals Program

For Researchers that want to boost their career with management expertise.

This compact MBA Program is characterized by its focus on participants with a natural sciences or engineering background. It provides research-oriented and scientific methods and a high level of flexibility.

Six of the seven units offered can be taken in any order and at any start. Each unit lasts five days and sets current management issues in the context of present research and relates them to accepted business practices and solutions.

The units are designed to be taken parallel to the job. And for those who want to go further, the credit points for the MBA Fundamentals Program can be recognized internationally within full MBA programs.



The course Intercultural Training is not mandatory for the completion of the certificate and does not grant credits. However, participation is strongly advised when completing the full program.

# HECTOR SCHOOL

## OF ENGINEERING & MANAGEMENT

Do you have questions? We are looking forward to assisting you.



### International Department of the Karlsruhe Institute of Technology (KIT) gGmbH

Schlossplatz 19 | 76131 Karlsruhe/Germany

Phone +49 (0)721-608 47880

Fax +49 (0)721-608 47882

E-mail [info@hectorschool.kit.edu](mailto:info@hectorschool.kit.edu)

Web [www.hectorschool.kit.edu](http://www.hectorschool.kit.edu)

### Imprint

Errors and omissions excepted.

Publisher: Marketing Department HECTOR School of Engineering & Management

Edition: 12/2023

Photos: International Department gGmbH, Karlsruhe Institute of Technology (KIT), iStock, shutterstock

More about



our Services

Our Social Media



Channels