Study Programme
Technology

PFH | PRIVATE UNIVERSITY of Applied Sciences

Master of Science

Digitalization and Automation
Industrial Engineering
New Mobility – Micromobility
Lightweight Engineering & Composites

ASIIN Akkreditierter Studiengang 2020-2027

Akkreditierungsrat Programm akkreditiert

European Accreditation of Engineering Programmes EUR-ACE®

Content

About PFH
Private University of Applied Sciences

As the oldest and largest private university in Lower Saxony, we have been paving the way for success for over 25 years. Our Management & Technology programmes are designed to educate the next generation of leaders, innovators, and entrepreneurs. With a focus on practical learning and real-world experience, you will gain the skills and knowledge you need to succeed in the competitive business landscape. Plus, our personalized approach means that we are here to support you every step of the way as you unleash your full potential. PFH currently offers more than 50 campus or distance learning programmes with Bachelor's and Master's degrees in the fields of Management, Business Law, Business Information Systems, Business Psychology, Psychology and Technology. The nearly 4,500 enrolled students (as of January 2023) divided into 650 campus students and 3,850 distance learning students.

PFH runs the technological degree programmes at ist Hansecampus in Stade, which is located directly in the CFK Valley e. V. competence network. In 2008, the university opened its new building there, with state-of-the-art laboratory and lecture halls. Small study groups ensure an excellent supervision ratio and guarantee individual support from professors and lecturers. Not only the special engineering know-how is taught, but also additional business knowledge that provides graduates with important management skills.

As an enrolled student at PFH, you'll enjoy a wide range of perks that are designed to enhance your student experience. With our semester and culture ticket, you'll have the freedom to explore all that Lower Saxony has to offer – completely free of charge! Hop on a train and discover new cities, or take advantage of discounted cultural activities and events – the choice is yours. Plus, with so much to see and do, you'll never be bored as you study and grow at PFH.

Due to the tightly organized, practical and business-oriented education, companies have a high demand for PFH graduates. The university has applied these factors to its technology degree programmes. The programmes aim to train engineers to become specialists in this key technology.

Benefits of Study Programmes

Unique
Europe-wide unique study courses.

Career-oriented
Digitalization and Automation, Industrial Engineering, New Mobility - Micromobility and Lightweight Engineering & Composites - all these study programmes are geared to current megatrends and specifically impart the knowledge that is in demand in the present and future. Currently specialists in these fields are urgently needed. And having studied "German Engineering" directly on site is another great advantage. You will have excellent career opportunities in the coming years.

High-Tech-Location
The PFH Hansecampus Stade offers 3,000 square meters of space, including a lecture hall for around 140 students, numerous other seminar rooms and laboratories with state-of-the-art equipment, a mensa, offices and meeting rooms for professors and lecturers.

Practice-related
Strong network and business contacts to corporations and scientific establishments, integration of business studies and management skills into study programme.

Individual
PFH Stade stands out with small study groups and individual support. Language lessons as well as a semester ticket for public transport (including free rides to Hamburg) is included in the tuition fee.

On top students can train for free in the local VFL Stade (offering for example basketball, baseball, cricket, martial arts).

The Technology Degree Programmes at a Glance

Study Programme	Course Degree	ECTS Credits	Standard Period of Study	Special Features	Cf. Page
Digitalization and Automation	Master of Science	120	4 semesters	full-time in English	8
Industrial Engineering	Master of Science	120	4 semesters	full-time in English	10
New Mobility – Micromobility	Master of Science	120	4 semesters	full-time in English	12
Lightweight Engineering & Composites	Master of Science	60	3 semesters	full-time in English	14

Study Programme
Master

Digitalization and Automation | Master of Science | 4 semesters

01

Module 1: Consolidation of Mathematics and Technical Mechanics
Higher Mathematical Methods, Higher Technical Mechanics

Module 2: Advanced Project Management
Agile Project Management, Digital Enterprise Planning

Module 3: Big Data
Machine Learning, OLAP and Data Mining

Module 4: Innovation and Digital Transformation
Digital Business Models, Innovation Management and Entrepreneurship

Module 5: Legal and ethical issues in Engineering
Ethics of Engineering, Intellectual Property Rights

Module 6: Sustainable Development / Circular Economy
Sustainable Design of Structures, Circular Economy

02

Module 7: Sensor Technology and Applications
Measurement and Control Technology, Sensor Technology

Module 8: Automation
Programmable Logic Controllers (PLC), Actuators and Sensors in Automation and Robotics

Module 9: Information Technology and Cyber Security
IT Security Threads and Measures, Data, Information and Knowledge Technology

Module 10: Digital Technologies
Industrial Internet of Things (IIoT), Applied Simulation / Virtual, Augmented, Mixed Reality

Module 11: Management Accounting
Internal Accounting and Controlling, Finance and Risk Management

Module 12: Change Management and Leadership
Change Management, Leadership

03

Module 13: Quality Assurance and Quality Control
Quality Techniques and Procedures, Nondestructive Testing (NDT)

Module 14: Robotics
Applied Robotics, Applied Control of Dynamic Systems

Module 15: Image Processing
Digital Image Processing, Digital Image Transformation

Module 16: Automation Lab
Automation, Robotic and Machine Learning Lab

Module 17: Project / Practice Module
Research Methods and Knowledge Management, Internship

04

Module 18: Master Thesis
Master Thesis, Disputation

Subject to individual changes.

Career opportunities

Whether in companies, organizations or in start-ups: Students of Digitalization and Automation acquire the most proper ability to work for example as production managers, factory planners and strategic planners. They will be able to better understand, shape and lead the increasingly digitalized industry of the future.

Curriculum Structure

The full-time Master's study programme takes place at the PFH campus in Stade. The study programme lasts for 4 semesters with a total of 120 ECTS. It is completely in English and according to the latest industrial requirements. Having small learning groups means you will be getting individual support from our professors.

Digitalization and Automation
Master of Science (M.Sc.)
120 ECTS

Exploring the newest Developments in Science and Technology

Do you like to break new ground and use digital and automated approaches to do so? Would you like to study the latest developments in science and technology?

The Digitalization and Automation study programme is aimed at graduates of electrical engineering, mechanical engineering, computer science and industrial engineering. In the field of robotics, PLC-programming, automation and machine learning technologies, you will be introduced to new developments and future-oriented topics. The special features of the newly created curriculum are the advanced study contents and varied teaching activities, such as interactive lectures and a practice-oriented training on current robots and full-fledged, modern industrial devices from well-known manufacturers.

The future of Master's graduates is the digital, computerised and robotised world. You will develop a comprehensive understanding of digitalization and automation and your studies will prepare you in the best possible way to apply your knowledge in those fields.

Overview

Degree Master of Science (M.Sc.)

ECTS 120

Duration 4 semesters

Start Dates April 1st or October 1st

Admission Requirements Completed university degree in (industrial) engineering, technical-scientific or a closely related subject.

Language Requirements Proof of advanced English language skills is required, eg TOEFL iBT 86, IELTS 6,5, ESOL CAE or BEC Higher

Application Deadline Possible to apply at any time. International applicants are advised to apply at least 3 months before the programme start.

Application Documents PFH application form, letter of motivation, CV, copies of all university diplomas and internship certificates, letters of reference from university and/or research center and/or company, copy of passport, digital photo

Study Location Stade

Tuition Fees
900.- Euros per month

500.- Euros admin fee (one-off) waived for EU Citizens

500.- Euros enrolment fee (one-off)

1.000.- Euros examination fee (one-off)

Application
pfh-university.com/application

Industrial Engineering | Master of Science | 4 semesters

01

Module 1: Consolidation of Mathematics and Technical Mechanics
Higher Mathematical Methods, Higher Technical Mechanics

Module 2: Advanced Project Management
Agile Project Management, Digital Enterprise Planning

Module 3: Big Data
Machine Learning, OLAP and Data Mining

Module 4: Innovation and Digital Transformation
Digital Business Models, Innovation Management and Entrepreneurship

Module 5: Legal and ethical issues in Engineering
Ethics of Engineering, Intellectual Property Rights

Module 6: Sustainable Development / Circular Economy
Sustainable Design of Structures, Circular Economy

02

Module 7: Sensor Technology and Applications
Measurement and Control Technology, Sensor Technology

Module 8: Advanced Materials and Technologies
Additive Manufacturing, Composites and Processes

Module 9: Information Technology and Cyber Security
IT Security Threads and Measures, Data, Information and Knowledge Technology

Module 10: Digital Technologies
Industrial Internet of Things (IIoT), Applied Simulation / Virtual, Augmented, Mixed Reality

Module 11: Management Accounting
Internal Accounting and Controlling, Finance and Risk Management

Module 12: Change Management and Leadership
Change Management, Leadership

03

Module 13: Quality Assurance and Quality Control
Quality Techniques and Procedures, Nondestructive Testing (NDT)

Module 14: CRM and Sales Psychology
Customer Relationship Management, Purchases Decisions and Consumer Behavior

Module 15: Personal Selling in a Digital World
Sales Pitch, Negotiation Tactics, Solution Selling and Serivitization

Module 16: Global Logistics and Supply Chain Management
Supply Chain Management, Transport and Distribution Logistics

Module 17: Project / Practice Module
Research Methods and Knowledge Management, Internship

04

Module 18: Master Thesis
Master Thesis, Disputation

Subject to individual changes.

Career opportunities

As an Industrial Engineer, you can take advantage of a wide range of opportunities. Unlike an engineer, there is less specialization. The industrial engineer acts as a management generalist and is in demand in every industry. Characterizing for later jobs are the interface character between technology and business as well as the focus on analysis, solution finding and the management of demanding challenges.

Curriculum Structure

The full-time Master study programme takes place at the PFH campus in Stade. The study programme lasts for 4 semesters with a total of 120 ECTS. It is completely in English and according to the latest industrial requirements. Having small learning groups means yu will be getting individual support from our professors.

Industrial Engineering
Master of Science (M.Sc.)
120 ECTS

Optimizing Processes and Workflows

For engineers and industrial engineers with a passion for innovation, who design the interfaces of business and technology and who want to improve products, processes and corporate structures in the long term.

The comprehensive addition to any technically-oriented academic degree „Industrial Engineering“ impresses with its triad of engineering and business management specializations and the digitization of processes.

The goal is to address the rapidly changing tasks at the interface between sustainability, engineering and digitalization responsibly and succesfully. Also you can develop or improve engineering products with a view to optimizing their marketability in a global context.

Overview

Degree Master of Science (M.Sc.)

ECTS 120

Duration 4 semesters

Start Dates April 1st or October 1st

Admission Requirements Completed university degree in (industrial) engineering, technical-scientific or a closely related subject.

Language Requirements Proof of advanced English language skills is required, eg TOEFL iBT 86, IELTS 6,5, ESOL CAE or BEC Higher

Application Deadline Possible to apply at any time. International applicants are advised to apply at least 3 months before the programme start.

Application Documents PFH application form, letter of motivation, CV, copies of all university diplomas and internship certificates, letters of reference from university and/or research center and/or company, copy of passport, digital photo

Study Location Stade

Tuition Fees
900.- Euros per month

500.- Euros admin fee (one-off) waived for EU Citizens

500.- Euros enrolment fee (one-off)

1.000.- Euros examination fee (one-off)

Application
pfh-university.com/application

New Mobility – Micromobility | Master of Science | 4 semesters

01

Module 1: Consolidation of Mathematics and Technical Mechanics
Higher Mathematical Methods, Higher Technical Mechanics

Module 2: Advanced Project Management
Agile Project Management, Digital Enterprise Planning

Module 3: Big Data
Machine Learning, OLAP and Data Mining

Module 4: Innovation and Digital Transformation
Digital Business Models, Innovation Management and Entrepreneurship

Module 5: Legal and ethical issues in Engineering
Ethics of Engineering, Intellectual Property Rights

Module 6: Sustainable Development / Circular Economy
Sustainable Design of Structures, Circular Economy

02

Module 7: Sensor Technology and Applications
Measurement and Control Technology, Sensor Technology

Module 8: Advanced Materials and Technologies
Additive Manufacturing, Composites and Processes

Module 9: Information Technology and Cyber Security
IT Security, Threads and Measures, Data, Information and Knowledge Technology

Module 10: Digital Technologies
Industrial Internet of Things (IIoT), Applied Simulation / Virtual, Augmented, Mixed Reality

Module 11: Management Accounting
Internal Accounting and Controlling, Finance and Risk Management

Module 12: Change Management and Leadership
Change Management, Leadership

03

Module 13: Quality Assurance and Quality Control Quality Techniques and Procedures
Quality Techniques and Procedures, Nondestructive Testing (NDT)

Module 14: Mobility Concepts and Technologies
Vehicle Categorisation, Novel Drive Concepts, Energy Storage

Module 15: Infrastructure in Transport and Mobility
Road Network (Infrastructure), Energy Supply (Charging Infrastructure)

Module 16: Design for Mobility
Digital Mockup, Lightweight Design

Module 17: Project / Practice Module
Research Methods and Knowledge Management, Internship

04

Module 18: Master Thesis
Master Thesis, Disputation

Subject to individual changes.

Career opportunities

A job for the future that will become increasingly important. With the focus on New Mobility - Micromobility, graduates are able to develop leadership skills at a higher management level. They will be involved in the development of mobility solutions as well as in planning and strategically oriented decision-making.

Curriculum Structure

The full-time Master's study programme takes place at the PFH campus in Stade. The study programme lasts for 4 semesters with a total of 120 ECTS. It is completely in English and according to the latest industrial requirements. Having small learning groups means you will be getting individual support from our professors.

New Mobility – Micromobility
Master of Science (M.Sc.)
120 ECTS

Creating the Future of new Mobility

For you, deciding between car, bus or train is ancient history? Are you interested in sustainable ways of getting around? The Master's study programme Mobility – Micromobility provides a study programme in a growing and future-oriented subject area.

The Master's programme is aimed at engineers from a wide range of disciplines as well as designers who are enthusiastic about materials, locomotion and lightweight construction. The study programme offers the best professional conditions thanks to the special expertise in lightweight construction and fibre composites, which has been part of PFH in research and teaching for years. In addition, you will apply the knowledge you have acquired during your studies to practical, "real-life" projects.

As a graduate of the New Mobility degree programme, you will be involved in the development of mobility solutions and will be able to use your knowledge to understand mobility concepts and evaluate them.

Overview

Degree Master of Science (M.Sc.)

ECTS 120

Duration 4 semesters

Start Dates April 1st or October 1st

Admission Requirements Completed university degree in (industrial) engineering, technical-scientific or a closely related subject.

Language Requirements Proof of advanced English language skills is required, eg TOEFL iBT 86, IELTS 6,5, ESOL CAE or BEC Higher

Application Deadline Possible to apply at any time. International applicants are advised to apply at least 3 months before the programme start.

Application Documents PFH application form, letter of motivation, CV, copies of all university diplomas and internship certificates, letters of reference from university and/or research center and/or company, copy of passport, digital photo

Study Location Stade

Tuition Fees
900.- Euros per month

500.- Euros admin fee (one-off) waived for EU Citizens

500.- Euros enrolment fee (one-off)

1.000.- Euros examination fee (one-off)

Application
pfh-university.com/application

Lightweight Engineering & Composites | Master of Science | 3 semesters

01

Module 1: Business Administration

Internal Accounting & Controlling (IAC), Strategic Management (SMA)

Module 2: Consolidation of math.-engineering science principles

Calculation Methods in Structural Mechanics (MSM), Material Mechanics and Material Behaviour (WME)

Module 3: Structural design of Composites

Damage-Tolerant Structural Design (STS), Non-linear Methods of Structural Design (NLM)

Module 4: Partial automatic and automatic manufacturing processes

Assembly Logistics of automated Production processes (MLF), Quality Assurance methods in Production and Service (QFS)

German

German Level A1, German Level A2

Management

Sales Management I, Sales Management II, Project Management, Business Simulation Game

02

Module 5: Sustainable Process Optimisation

Deterministic Assessment of Production Processes (DBP), Industrial Production Technologies for Composite Structures (IPT), Digital plant Planning (DFP)

Module 6: Design of Multifunctional, Composite Structures

Adaptive Composite Structures (AFV), Hybrid Construction, (HYS), Design of Composite Materials (EVT)

Management

Innovation Management

German

German Level B1.1

03

Module 7: Master's thesis

Master's Thesis, Disputation of the Master thesis

Subject to individual changes.

Career opportunities

This qualification will open up the best possible career prospects, with the CFRP branch of the economy alone being forecast to grow by 10 percent a year. It offers a cross-industry qualification enabling you to undertake management tasks in activities related to fibre composites. It will, for example, open up excellent career prospects in aircraft construction, automotive engineering, machine construction, ship and yacht building, railway vehicle and wind turbine construction.

Curriculum Structure

This full-time programme with its inclusion of management courses and intensive German language training is designed to give international students the full student experience and to increase their employability in Germany, Europe and worldwide. The heart of the M.Sc. programme consists of four 16-day blocks of lectures and workshop/lab sessions, between which students take intensive German language and Management courses. The final semester is dedicated to the Master's thesis. Upon successful completion, students will be awarded a fully accredited and state-recognised M.Sc. degree in Lightweight Engineering & Composites, a Management Certificate, and a German Language Certificate.

Lightweight Engineering & Composites
Master of Science (M.Sc.)
60 ECTS (Part-Time),
90 ECTS (Triple-Award)

CFRP – Key Technology as a Career Factor

The significance of composite technologies will strongly increase over the next years. The availability of study programmes on this subject is directly based on the demand from companies and research institutions for education and training in order for Germany to remain competitive in these key technologies in the future.

Carbon fibre-reinforced polymers (CFRP) and other composite materials are considered to be the material family of the future. These materials are particularly robust, non-corrosive and at the same time lighter than steel or aluminum. The CFRP industrial sector is predicted to grow by around 10% per year. Lightweight structures made of composite materials are increasing in importance across all industrial branches such as the automobile, mechanical engineering and plant construction, railway and shipbuilding industries. The demand of business enterprises and research institutions for engineers specialized in the field of composite structures who can work in positions at the interface between research, production and technology management will strongly increase.

Overview

Degree Master of Science (M.Sc.)

ECTS 90
(M.Sc. 60, Management Certificate 12, German Language Certificate 18)

Duration 3 semesters

Start Date October 1st

Admission Requirements Degree in engineering or mathematical science with above-avarage marks and ar least one year of professional experience.

Language Requirements Proof of advanced English language skills is required, eg TOEFL iBT 86, IELTS 6,5, ESOL CAE or BEC Higher

Application Deadline Possible to apply at any time. International applicants are advised to apply at least 3 months before the programme start.

Application Documents PFH application form, letter of motivation, CV, copies of all university diplomas and internship certificates, letters of reference from university and/or research center and/or company, copy of passport, digital photo

Study Location Stade

Tuition Fees
1.200.- Euros per month (triple-award-programme)

990.- Euros per month (part-time programme)

500.- Euros admin fee (one-off), waived for EU Citizens

500.- Euros enrolment fee (one-off)

1.000.- Euros examination fee (one-off)

Application
pfh-university.com/application

Professors and Lecturers

The Professors of the PFH are both subject-matter experts in their respective disciplines and proven practitioners with at least five years' professional experience. They are thus able to impart to you as students both in-depth theoretical knowledge based on state-of-the-art research and its practical application. This enables you as graduates of the PFH to transfer what you have learnt quickly and efficiently to the world of work.

For corporate partners, professors are, in equal measure, contact persons for collaborative projects. These may be both contract research projects on application-based issues and practical projects, in which students perform scientific analysis of concrete case studies from your company.

The professorial team is complemented by a large number of Lecturers, to whom the PFH awards teaching contracts to give an even broader basis to its transfer of knowledge. What is common to them all is that they have the relevant outstanding expertise and experience to ensure that PFH students are offered the highest quality of content in the study programmes.

Professors and Lecturers

Prof. Dr. Frank Albe
President | General Business Administration, specialising in Tourism Management and Controlling

Prof. Dr. sc. agr. Julian Voss
Professor for General Business Administration especially Food-/ Agribusiness-Management

Prof. Dr.-Ing. Heinrich Fehren
Adaptronics

Prof. Dr.-Ing. Marc Siebert
Technology of Fibre-Reinforced Composites

Peggy Repenning
Vice-Chancellor | Management PFH Hansecampus Stade

Prof. Dr.-Ing. habil. Nikolay Avgustinov
Production and Manufacturing Technology

Prof. Dr.-Ing. Richard Degenhardt
Stability of Fibre-Reinforced Composites

Prof. Dr. Hubert Schüle
Business Informatics and E-Business

Prof. Dr.-Ing. Wilm F. Unckenbold
Vice-President for Technology | Technology of Fibre-Reinforced Composites

Scholarships and Funding Opportunities

We offer various scholarship programmes and special arrangements to provide financial support. Our team is dedicated to helping you explore all available funding options and guiding you through the application process. Let us assist you in finding the best solution for your individual needs.

Selection:

Deutschlandstipendium (Germany Scholarship)
The programme, initiated by the government in 2011, supports students who have demonstrated the promise of outstanding achievements in their studies and careers. As a scholarship holder you receive monthly financial support of 300 euros for the duration of one year. The federal government and committed sponsors each finance half of the scholarship. You will also become part of a network and can benefit from contacts in the field. In this way the Deutschlandstipendium offers more than just financial support.

STIBET-Programme
The German Academic Exchange Service (DAAD) funds the STIBET-Programme with funds by the Federal Foreign Office. The International Office of PFH offers scholarships for study completion and scholarships for social engagement to qualified international students of PFH.

Scholarship for Study Completion
- Apply in the last semester of your studies.
- Scholarship sum: EUR 1,000.- (one-off)

Scholarship for Social Engagement
- Apply from the second semester of yourstudies
- Scholarship sum: EUR 1,500.- (one-off)

DAAD Prize
The DAAD Prize has been awarded for over ten years now and aims to put a face to the many international students at German universities and link them with their stories. Having been a recipient of the DAAD Prize can be of great advantage when beginning a professional career.

What you need to know
- Performance-oriented scholarship
- Apply from the 2nd semester of your studies
- Award amount: EUR 1,000 (one-off)

Top – Student Scholarship
PFH offers a 20% scholarship for outstanding students who apply for admission to their programmes. This scholarship is awarded to any applicant based on their academic achievements and other relevant criteria. It is a great opportunity for exceptional students to receive financial support to pursue their education at PFH.

Other Scholarship Programmes
The following scholarships may also be interesting for you. Please note that if you are already receiving a talent and performance-based scholarship, you cannot additionally receive a Germany Scholarship.

- Erasmus Scholarship Programmes
- Friedrich-Ebert Stiftung
- Heinrich Böll Foundation
- Konrad-Adenauer Stiftung

Questions - always welcome

Need assistance? Just let us know and we'll be happy to help.

International Student Recruitment

Call +49 172 2644144

WhatsApp Chat +49 172 2644144

EMail study@pfh.de

Board of Trustees Airbus Operations GmbH | Bahlsen GmbH & Co. KG | Baker Tilly Holding GmbH | Clarios Germany GmbH & Co KGaA | Composites United e.V. | Continental AG | Gothaer Versicherungen | Novelis Deutschland GmbH | Ottobock SE & Co. KGaA | PricewaterhouseCoopers GmbH | SAP SE | T-Systems Business Services GmbH | TUI AG

PFH Hansecampus Stade

PFH Private University of Applied Sciences

Airbus-Straße 6
21684 Stade

Tel. +49 [0]4141 7967-0
study@pfh.de

www.pfh.de
www.pfh-university.com

Holding Company
Gesellschaft für praxisbezogene Forschung und wissenschaftliche Lehre GmbH

Photocredit:

Michael Hensel, Foto Schattke (Stade), PFH,
AdobeStock: Drobot Dean, StockPhotoPro, stokkete, vectorfusionart, WavebreakmediaMicro