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BACHELOR (B.ENG.) ENGINEERING

Engineering studies open up a world of never-ending possibilities. Combining scientific knowledge, mathematical proficiency and advanced technological expertise, skilled engineers are involved in a wide range of industries, and have a far reaching influence on our everyday lives.

Engineers are required all over the world in order for humanity to successfully face many different challenges: they can assist the global transition to clean energy by developing stronger batteries for electrical vehicles or they can build cost efficient and durable housing by developing innovative ways to recycle cement.

Earn a Bachelor's degree in Engineering for IU International University of Applied Sciences, and develop a strong foundation of technical know-how and theoretical expertise that will serve you well throughout your professional career path.

Degree
Bachelor of Engineering (B.Eng.)

Electives
In the distance learning programme Engineering, you can choose electives worth 30 ECTS and thus focus on interesting practical areas.

Study model and accreditation*
- Online
- German accredited institution, recognised by ZFU (German Central Office for Distance Learning)

Start and duration of study
Official start date: August 15th, 2023*
Afterwards: Anytime
Duration: optionally 36, 48 or 72 months

Credits
180 ECTS

INTERNATIONAL UNIVERSITY OF APPLIED SCIENCES

*This programme is still in the process of accreditation and recognition. We expect approval from the relevant ministry by the programme's official start date. So far, all IU programmes have been accredited and approved successfully and on time.

Study Content (180 ECTS)

MODULE TITLE	SEMESTER	CREDITS (ECTS)	TEST TYPE
Engineering: Branches, Methods, Applications, Trends	1	5 ECTS	E/WAWA
Introduction to Academic Work		5 ECTS	BWB
Mathematics: Linear Algebra		5 ECTS	E
Fundamentals of Physics		5 ECTS	E
Introduction to the Internet of Things		5 ECTS	E
Introduction to Computer Science		5 ECTS	E
Fundamentals of Chemistry	2	5 ECTS	E
Production Engineering		5 ECTS	E
Mechanics – Statics		5 ECTS	E
Automation Technology		5 ECTS	E
Mathematics: Analysis		5 ECTS	E
Signals and Systems		5 ECTS	E
Control Systems Engineering	3	5 ECTS	E
Materials Science for Engineers		5 ECTS	E
Sensor Technology		5 ECTS	E
Electrical Engineering		5 ECTS	E
Mechanics – Kinematics and Dynamics		5 ECTS	E
Technical Mechanics: Elastostatics		5 ECTS	E
Introduction to Electromagnetics	4	5 ECTS	E
Fundamentals of Systems Simulation		5 ECTS	AWB
Introduction to Data Protection and Cyber Security		5 ECTS	E
Statistics – Probability and Descriptive Statistics		5 ECTS	E
Introduction to Programming with Python		5 ECTS	E
Project: Simulation of Systems		5 ECTS	WAPR
Fundamentals of Data-Driven Engineering	5	5 ECTS	WACS
Seminar: The Big Data Society		5 ECTS	WARE
Electrical Machines and Energy Technology		5 ECTS	E
Project: Control Unit Design for a Mechanical System		5 ECTS	WAPR
Elective A		10 ECTS	
Elective B	6	10 ECTS	
Elective C		10 ECTS	
Bachelor Thesis and Colloquium		10 ECTS	WABT & PC

E = Exam, OA = Oral assignment, PC = Presentation: Colloquium, WB = Workbook, BWB = Basic Workbook, AWB = Advanced Workbook, WABT = Written assessment: Bachelor thesis, WACS = Written assessment: Case study, WAMT = Written assessment: Master thesis, WAPR = Written assessment: Project report, WARE = Written assessment: Research essay, WAWA = Written assessment: Written assignment, OP = Online Presentation, OPR = Oral project report, P = Portfolio, POP = Proof of Participation

CHOOSE YOUR ELECTIVES

Choose one elective from "Electives A" list:

- Functional Programming with Python and Inferential Statistics
- Introduction to Electronics and Electronic Circuits
- Mechatronic Systems and Design
- Operating Systems, Networks and Network Forensics
- Robot Kinematics and Dynamics
- Supply Chain Management and Innovation

Choose one elective from "Electives B" list:

- Agile Project Management and Smart Products
- Digital and Information Technology and Programming with C/C++
- Electrical Drive Technology and Fluid Mechanics
- Electro Mobility
- Energy Technology
- Machine Learning – Supervised and Unsupervised Learning
- Mechatronic Systems and Programming with C/C++
- Pentesting and DevSecOps
- Simulation and Control of Robots

Choose one elective from "Electives C" list:

- Autonomous Driving
- Cryptography and IT-Law
- Databases and Explorative Data Analysis and Visualization
- Embedded Systems and Programming with C/C++
- Embedded Systems, Microcontrollers and Logical Circuits
- Renewable Energies
- Smart Services

CAREER PROSPECTS

The Engineering (B. Eng.) programme prepares students for jobs involving collaboration with product development teams in the conception, development, prototyping and production of products. Graduates can also work in the digitalisation of industry designing smart products and services, designing interfaces, definition of infrastructure, data acquisition from machines or devices, data transmission, data analysis, conclusion on technical processes, as well as the definition of local cybersecurity measures. Engineering graduates can also do freelance consultancy work.

ADMISSION

We try to keep admission as simple as possible at IU. To successfully enrol, there are just a few requirements we need you to prove.

ADMISSION REQUIREMENTS

- Higher Secondary School Leaving Certificate such as A-Levels or IB Diploma and your transcript of records.
- A subject-related higher education entrance qualification.

Depending on your qualifications, you might have to meet additional requirements, such as successfully passing a university entrance examination or one of the following programmes to make sure you are ready to study with us:

- Bachelor Entrance Examination (included in Scholarship Program)
- Pathway Programme (for on-campus studies)

Please get in touch with our Study Advisory Team to find out the exact requirements applicable for your application.

SCHOLARSHIP PROGRAMME

Start in our Scholarship Programme as a participant with immediate access to 50% of your courses. You can do this by taking our Entrance Examination which will be included in your course as part of the Scholarship Programme. Once admission and the courses are completed, you can finish your degree.

Questions? Speak to your study advisor, they will guide your through every step of the process.

PROOF OF ENGLISH LANGUAGE SKILLS

We therefore ask for proof of your English language skills*. If English is your native language or you graduated from an English-speaking school/university, you don't need to prove your English skills.

Accepted certifications:

- English Courses (complimentary when signing up with IU)**
- TOEFL (min. 80 points) or
- IELTS (min. Level 6.0 out of 9 points) or
- Duolingo English test (min. 95 points) or
- Cambridge Certificate (min. B grade overall) or
- Equivalent proof

*Proof must be provided before the start of the study and must not be older than five years.
**Please note that English Courses aren't accepted as a language certificate for on campus study programmes.

8 STEPS TO COMPLETE YOUR STUDIES

1. **Register and apply online**
2. **Choose your course**
3. **Download your study scripts**
4. **Work independently with study scripts**
5. **Take part in Q&A sessions**
6. **Prepare for exams and take them either:**
   - directly online, or
   - at an IU examination centre (remember to register in time).
7. **Bachelor thesis and colloquium**
8. **Complete your studies with certificate**