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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.)



#### Start and duration of study

Official start date: Anytime

Duration: optionally 36, 48 or 72 months



#### Electives

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



#### Credits

180 ECTS credits



#### Study model and accreditation\*

- Online
- German accredited institution, recognised by ZFU (German Central Office for Distance Learning)

**Apply Now**

## Study Content (180 ECTS credits)

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

## 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
- Career Development
- Cryptography and IT-Law
- Databases and Explorative Data Analysis and Visualization
- Embedded Systems and Programming with C/C++
- Embedded Systems, Microcontrollers and Logical Circuits
- Mastering Prompts
- 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 you through every step of the process.

## PROOF OF ENGLISH LANGUAGE SKILLS

At IU, we teach in English to prepare you for the international market. We, therefore, ask for proof of your English language skills.\*

- TOEFL (minimum 80 points) or
- IELTS (minimum Level 6) or
- Duolingo English-Test (min. 95 points) or
- PTE Academics (minimum 59 points) or
- Cambridge Certificate (minimum Grade B)

# 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

\*Proof must be provided before the start of the study and must not be older than five years.