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# BACHELOR (B.SC.) APPLIED ARTIFICIAL INTELLIGENCE

It can be found in chatbots, digital assistants or self-driving cars: artificial intelligence leads to innovative products and services and has achieved spectacular successes for business and science. The Artificial Intelligence distance learning programme offers you a unique combination of methodological basics and specialisations for a broad field of applications. The focus of your bachelor's degree is on language and image processing, machine learning, robotics, UI/UX and software development. Since you complete the programme in English, you also have all the prerequisites to convince international audiences with your expertise.



#### Degree

Bachelor of Science (B.Sc.)



#### Duration

Online: 36, 48, or 72 months  
On Campus: 36 months



#### Study start

Start online studies: Anytime  
Start (on campus): then 2 times a year; Oct or Apr



#### Credits

180 ECTS credits



#### Study model and accreditation

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

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**iu** INTERNATIONAL  
UNIVERSITY OF  
APPLIED SCIENCES

## Study Content (180 ECTS credits)

PRESENCE TIMEFRAME	MODULE TITLE	SEMESTER	CREDITS (ECTS)	TEST TYPE
		<b>1</b>		
Oct/Nov/Dec	Artificial Intelligence		5	E
Oct/Nov/Dec	Introduction to Academic Work		5	BWB
Oct/Nov/Dec	Mathematics: Analysis		5	E
Jan/Feb/Mar	Introduction to Programming with Python		5	E
Jan/Feb/Mar	Collaborative Work		5	OA
Jan/Feb/Mar	Statistics – Probability and Descriptive Statistics		5	E
		<b>2</b>		
Apr/May	Object Oriented and Functional Programming with Python		5	P
Apr/May	Mathematics: Linear Algebra		5	E
Apr/May	Statistics – Inferential Statistics		5	E
Jul/Aug	Cloud Programming		5	P
Jul/Aug	Machine Learning – Supervised Learning		5	E
Jul/Aug	Machine Learning – Unsupervised Learning and Feature Engineering		5	WACS
		<b>3</b>		
Oct/Nov/Dec	Cloud Computing		5	E
Oct/Nov/Dec	Neural Nets and Deep Learning		5	OA
Oct/Nov/Dec	Data Science Software Engineering		5	E
Jan/Feb/Mar	Introduction to Computer Vision		5	E
Jan/Feb/Mar	Project: Computer Vision		5	WAPR
Jan/Feb/Mar	Introduction to Reinforcement Learning		5	E
		<b>4</b>		
Apr/May	Introduction to NLP		5	E
Apr/May	Project: NLP		5	WAPR
Apr/May	Agile Project Management		5	WAPR
Jul/Aug	Introduction to Data Protection and IT Security		5	E
Jul/Aug	User Experience		5	E
Jul/Aug	UX-Project OR Project: Edge AI		5	WAPR
		<b>5</b>		
Oct/Nov/Dec	Introduction to Robotics		5	E/WAWA
Oct/Nov/Dec	Intercultural and Ethical Decision-Making		5	WACS
Online	Electives A		10	
Jan/Feb/Mar	Seminar: Ethical Considerations in Data Science		5	WARE
Online	Electives B		10	
		<b>6</b>		
Apr/May	Project: From Model to Production		10	
Online	Electives C		10	
Online	Bachelor Thesis & Colloquium		10	WABT & PC

## CHOOSE YOUR ELECTIVES

### Choose one elective from

#### “Electives A” list\*:

- Augmented, Mixed and Virtual Reality
- Autonomous Driving
- Business Intelligence
- Data Analyst
- Data Engineer
- Database Developer
- Digital Signal Processing and Sensor Technology
- Production Engineering, Automation and Robotics

### Choose one elective from

#### “Electives B” list\*:

- Applied Sales
- International Marketing and Branding
- IT Project and Architecture Management
- Psychology of Human Computer Interaction
- Supply Chain Management

### Choose one elective from

#### “Electives C” list\*:

- Applied Sales
- Augmented, Mixed and Virtual Reality
- Autonomous Driving
- Business Intelligence
- Career Development
- Data Analyst
- Data Engineer
- Database Developer
- Digital Signal Processing and Sensor Technology
- Financial Services Management
- Foreign Language French
- Foreign Language German
- Foreign Language Italian
- Foreign Language Spanish
- International Marketing and Branding
- Internship\*\*
- IT Project and Architecture Management
- Production Engineering, Automation and Robotics
- Studium Generale
- Supply Chain Management
- et al.

## ELECTIVES

### **PRODUCTION ENGINEERING, AUTOMATION AND ROBOTICS**

This elective presents all of the mathematical and electronics basics you need to have in order to understand how industrial robotics is done. Learn what measurements and regulations, control system technologies and circuit and control elements are necessary for automation manufacturing. By the end of this specialisation, you'll be able to plan a robotic industrial arm and calculate its movement capacity. Furthermore, you'll explore the increasingly popular field of cyber-physical systems.

### **AUTONOMOUS DRIVING**

Get to know the basic concepts behind the architecture of self-driving vehicles. Explore the hardware and software behind autonomous driving, and the complex sensor solutions required for vehicles to process the space around them. This module will give you a well-rounded understanding of how motion control technology is designed and utilised, and the ways in which autonomous vehicles communicate with their surroundings. In addition, the ethical, social and design questions surrounding autonomous vehicle planning will be presented.

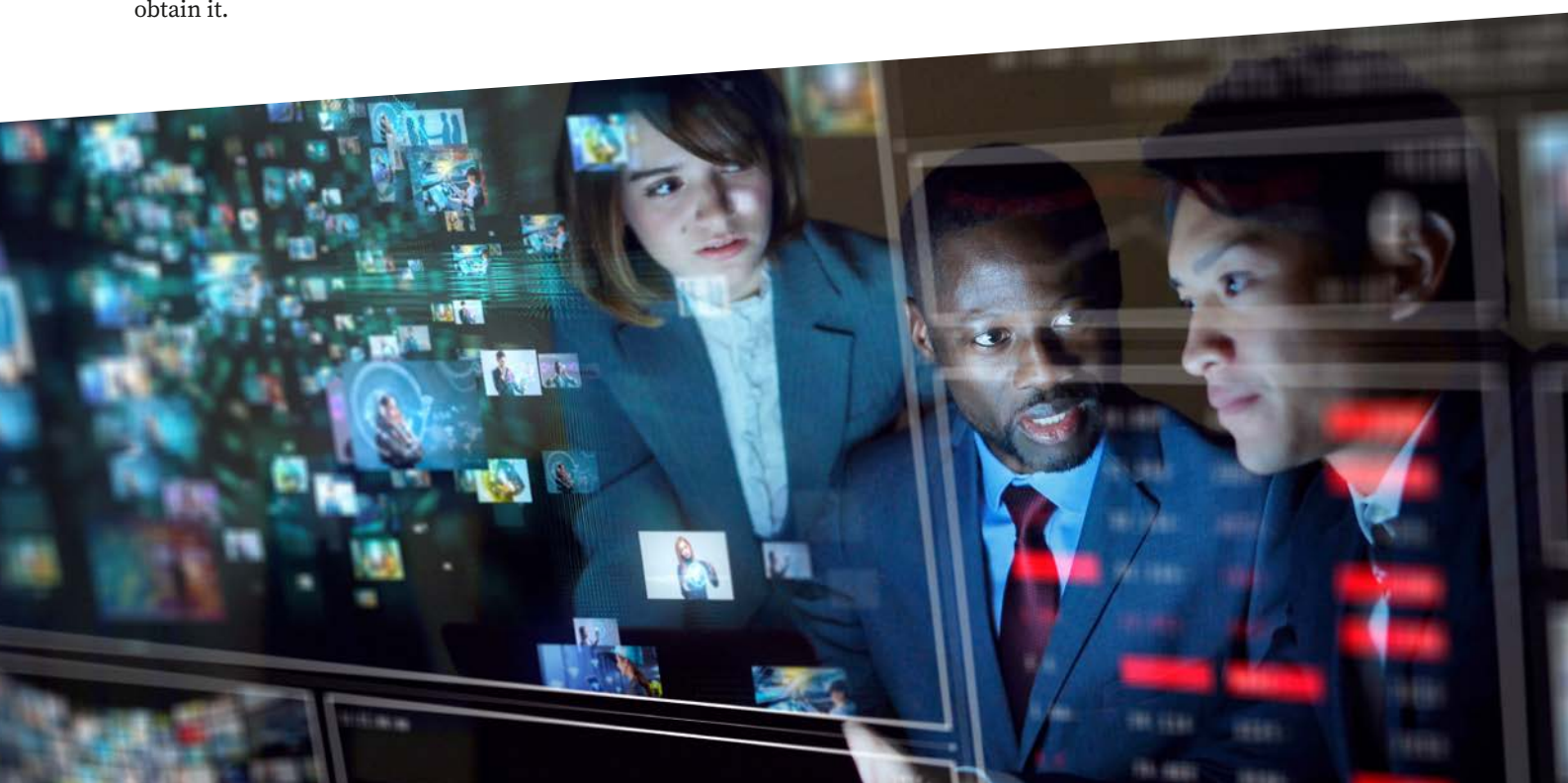
### **FINANCIAL SERVICES MANAGEMENT**

Get a systematic overview of financial markets, their structure and the different providers in the field. Understand the various services and functions required and offered in global corporate finance: financing, investments and working with banks. Understand how risks are assessed and mitigated with insurance contracts and securities. If you've ever wondered about the way that leasing or loans work, this specialisation will help you build a clear picture. Understanding complex financial terms and ideas is a very useful tool for all future managers – use your chance to obtain it.

## CAREER OUTLOOK

As an expert in Artificial Intelligence, you can expect fantastic career opportunities across a wide range of industries. By acquiring a necessary professional skill, that will be in high demand around the world in the foreseeable future, you'll position yourself at a wonderful starting point for not only developing an exciting career, but also enjoying lucrative opportunities.

Thanks to our multidisciplinary approach in this study programme, your skills will be easily implemented in any industry that utilises AI. Choose the specialisations that best suit your interests, and prepare yourself to jump right into the field of your choice, be it autonomous vehicles, Virtual & Augmented Reality as well as Data Protection and Analytics or smart homes.



# 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.