# BACHELOR (B.SC.) CLOUD COMPUTING

Dive into the digital future with our B.Sc. Cloud Computing online programme, designed for the ambitious learner. This degree offers the convenience of online studying, allowing you to explore the latest cloud technologies from anywhere, at any time. Our online cloud computing degree equips you with a comprehensive understanding of cloud architectures and practical hands-on experience, all within a flexible learning schedule that fits around your life.

As you progress through the B.Sc. Cloud Computing online programme, you'll develop essential soft skills such as strategic thinking and innovative problem-solving, alongside hard skills like advanced programming tailored to cloud applications and robust knowledge of cloud security. This unique blend of skills positions you perfectly for a successful career in the rapidly growing field of cloud computing, opening doors to opportunities worldwide.

**Degree**
Bachelor of Science (B.Sc.)

**Electives**
In the Cloud Computing distance learning programme, 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)

**Study start and duration**
Official start date: 15.09.2024*
Afterwards: Anytime
Duration: 36, 48, or 72 months

**Credits**
180 ECTS credits

**Apply Now**

**iu** 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 credits)

| MODULE TITLE | SEMESTER | CREDITS (ECTS) | TEST TYPE |
|---|---|---|---|
| **1** | | | |
| Introduction to Computer Science | | 5 | E |
| Cloud Computing | | 5 | E |
| Introduction to Academic Work | | 5 | BWB |
| Techniques and methods for agile software development | | 5 | E |
| | | 5 | E |
| Project: Agile Software Engineering | | 5 | WAPR |
| **2** | | | |
| Mathematics I | | 5 | E |
| Database Modeling and Database Systems | | 5 | E |
| Big Data Technologies | | 5 | E |
| Introduction to the Internet of Things | | 5 | E |
| Project: Build a Data Mart in SQL | | 5 | PO |
| **3** | | | |
| Operating Systems, Computer Networks, and Distributed Systems | | 5 | E |
| IT Infrastructure | | 5 | E |
| Introduction to Low-Code Development | | 5 | WACS |
| Computer Science and Society | | 5 | WAWA |
| Project: Low-Code Development | | 5 | OPR |
| **4** | | | |
| Introduction to Data Protection and Cyber Security | | 5 | E |
| Technical and Operational IT Security Concepts | | 5 | E |
| Security Controls in the Cloud | | 5 | E |
| Seminar: Current Topics in Cloud Computing | | 5 | WARE |
| Project: Security by Design in the Cloud | | 5 | WAPR |
| **5** | | | |
| Electives A | | 10 | |
| Electives B | | 10 | |
| Projekt: Agiles DevSecOps Software Engineering | | 5 | WAPR |
| **6** | | | |
| Electives C | | 10 | |
| Electives D | | 30 | |
| Cloud Programming | | 5 | PO |
| Bachelor Thesis & Colloquium | | 10 | WABT |

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 two electives from "Electives A" list*:**
– IT Architecture Management
– IT Service Management
– Introduction to Programming with Python
– Object Oriented and Functional Programming with Python
– Smart Devices I
– Smart Devices II
– Theoretical Computer Science and Mathematical Logic
– Requirements Engineering
– et al.

**Choose two electives from "Electives B" list*:**
– Managerial Economics
– Corporate Governance and Strategy
– Explorative Data Analysis and Visualization
– Data Engineering
– Smart Services I
– Smart Sevices II
– Threat Modeling
– Information Security Standards
– et al.

**Choose two electives from "Electives C" list*:**
– Project: IT Service Management
– IT Law
– Data Analytics and Big Data
– Advanced Data Analysis
– Smart Factory I
– Smart Factory II
– Cryptography
– Attack Models and Threat Feeds
– et al.

**Elective D**:**
– Intercultural and Ethical Decision-Making
– Conflict Management and Mediation
– Collaborative Work
– DevOps and Continuous Delivery
– Personal Career Plan
– Project: Digitalization and Automation Hackathon
– Internship: Bachelor Cloud Computing

*Each elective module can only be chosen once.
**Decide between an internship at a company or the modules of elective D. You complete the internship with a practical reflection. If you decide on the modules from elective D, all modules from this area must be completed. Mixed forms between internship and elective D are not possible.

# ELECTIVES TRACKS

| | ELECTIVE TRACK A | ELECTIVE TRACK B | ELECTIVE TRACK C |
|---|---|---|---|
| **STRATEGY** | – IT Architecture Management<br>– IT Service Management | – Managerial Economics<br>– Corporate Governance and Strategy | – Project: IT Service Management<br>– IT Law |
| **DATA** | – Introduction Programming with Python<br>– Object Oriented and Functional Programming in Python | – Explorative Data Analysis and Visualization<br>– Data Engineering | – Data Analytics and Big Data<br>– Advanced Data Analysis |
| **SMART** | – Smart Devices I<br>– Smart Devices II | – Smart Services I<br>– Smart Services II | – Smart Factory I<br>– Smart Factory II |
| **SECURITY** | – Theoretical Computer Science and Mathematical Logic<br>– Requirements Engineering | – Threat Modeling<br>– Information Security Standards | – Cryptography<br>– Attack Models and Threat Feeds |
| **MACHINE LEARNING** | – Mathematics: Analysis<br>– Mathematics: Linear Algebra | – Statistics: Probability and Descriptive Statistics<br>– Statistics – Inferential Statistics | – Machine Learning – Supervised Learning<br>– Machine Learning – Unsupervised Learning and Feature Engineering |

# CAREER OUTLOOK

If you're a forward-thinker eyeing a future in technology, our B.Sc. in Cloud Computing could be your gateway to an exciting career. This online degree prepares you for a wealth of opportunities across various sectors including tech startups, healthcare, finance, and more. Upon completion, you might find yourself driving innovation in cloud services, managing cloud infrastructure, or ensuring cybersecurity in industries ranging from entertainment to energy.

## CLOUD SOLUTIONS ARCHITECT

As a Cloud Solutions Architect, you blueprint and oversee the implementation of cloud services suited to an organisation's needs. This entails architecting robust, scalable cloud infrastructures, selecting appropriate cloud platforms and services, and ensuring seamless migration and integration processes. With a B.Sc. Cloud Computing online degree, you'll be in the frontline of enabling businesses to leverage cloud technologies for innovation and growth.

## CLOUD SECURITY ANALYST

Specializing as a Cloud Security Analyst, you'll play a crucial role in safeguarding an organization's cloud-based systems and data. Your responsibilities will include conducting risk assessments, developing security protocols, and responding to breaches. The knowledge and skills acquired from an online cloud computing degree prepare you for the challenges of maintaining privacy and security in the digital age.

## DEVOPS ENGINEER

With your B.Sc. Cloud Computing online, you can also excel as a DevOps Engineer, where development meets operations in a cloud environment. You'll automate and streamline the software development process, enhancing collaboration between teams and boosting operational efficiency. This position requires a solid grounding in cloud technology, coding, and system administration—all of which are covered in IU's program.

# ADMISSION

### HIGHER SECONDARY SCHOOL LEAVING CERTIFICATE
– 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
– Please get in touch with our Study Advisory Team to find out the exact requirements applicable for your application.

### WITHOUT HIGHER SECONDARY SCHOOL LEAVING CERTIFICATE
You can also study at IU International University of Applied Sciences (IU) without a higher secondary school leaving certificate. To do so, you simply need:
– Advanced vocational training (equivalent to a German vocational qualification at level GQR 6)* or
– At least two years of recognized vocational training (equivalent to a German vocational qualification at level GQR 4), followed by at least 3 years of professional experience (full-time)*: Depending on the focus of your training and professional activity and what you want to study, you can start directly with a trial phase or prove your aptness in other ways.

### ENGLISH LANGUAGE SKILLS
Depending on your personal circumstances, you might be required to provide proof of your English language proficiency. Your skills would need to match the **B2 level** of the Common European Framework (CEF).
We accept the following English language skills certificates*:
– TOEFL (minimum 80 points) or
– IELTS (minimum 6,0 points) or
– Duolingo English Test (minimum 95 points) or
– Cambridge Certificate (minimum Grade B)

**Note:** Proof must be provided before the start of the study and must not be older than five years. Is English your native language, or have you graduated from an English-speaking school or university? Then you do not need to prove your English language proficiency.

Get in touch with our study advisors for more details.

### SCHOLARSHIP PROGRAMME
Apply for the Scholarship Programme and receive a discount on your tuition fees.

Please get in touch with our Study Advisory Team for more details.

## 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

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*If you have completed your vocational training land work experience abroad, an equivalency assessment will be carry out by IU International University of Applied Science. Qualifications can be accepted as equivalent if your vocational qualification is comparable to a German vocational qualification at level GQR 4 or GQR 6.
**It is at the discretion of IU International University to accept other language certificates English B2 (CEFR).