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BACHELOR (B.SC.) COMPUTER SCIENCE

Computer science is revolutionising industries from within and is at the core of innovation, efficiency, and improvement of our daily lives. From the way we live to the way we work, communicate and travel, computer science is enabling brand new concepts to be realised. As society expects more and more information at our fingertips and communication in an instant, computer science specialists are in high demand.

The IU bachelor's in computer science is designed to train you in the fundamentals of the field, while also teaching you practical application and human impact. You'll explore cutting-edge topics like Big Data, cloud computing, and you will learn to develop a variety of IT systems and software. You'll learn to adapt quickly to challenges, designing, developing, and applying computational processes to ensure high functionality and security for users. With our practical approach to learning, you'll earn a competitive advantage in the job market as a graduate, mastering both technical and soft skills that companies look for in potential candidates.



Degree

Bachelor of Science (B.Sc.)



Duration

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



Study start

Start (online studies): Anytime
Start (on campus): each Oct, Jan, Apr or July*



Credits

180 ECTS



Study model and accreditation

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

Study Content (180 ECTS)

PRESENCE TIMEFRAME	MODULE TITLE	SEMESTER	CREDITS (ECTS)	TEST TYPE
		1		
Oct/Nov/Dec	Introduction to Computer Science		5 ECTS	E
Oct/Nov/Dec	Object-oriented Programming with Java		5 ECTS	E
Oct/Nov/Dec	Intercultural and Ethical Decision-Making		5 ECTS	WACS
Jan/Feb/Mar	Mathematics I		5 ECTS	E
Jan/Feb/Mar	Statistics: Probability and Descriptive Statistics		5 ECTS	E
Jan/Feb/Mar	Collaborative Work		5 ECTS	OA
		2		
Apr/May/June	Data Structures and Java Class Library		5 ECTS	E
Apr/May/June	Mathematics II		5 ECTS	E
Apr/May/June	Web Application Development		5 ECTS	AWB
Jun/Jul/Aug	Project: Java and Web Development		5 ECTS	PO
Jun/Jul/Aug	Computer Architecture and Operating Systems		5 ECTS	E
Jun/Jul/Aug	Introduction to Academic Work		5 ECTS	BWB
		3		
Oct/Nov/Dec	Database Modeling and Database Systems		5 ECTS	E
Oct/Nov/Dec	Project: Build a Data Mart in SQL		5 ECTS	PO
Oct/Nov/Dec	Requirements Engineering		5 ECTS	E
Jan/Feb/Mar	Algorithms, Data Structures and Programming Languages		5 ECTS	E/AWB
Jan/Feb/Mar	IT Service Management		5 ECTS	E
Jan/Feb/Mar	Project: IT Service Management		5 ECTS	WAPR
		4		
Apr/May/June	Computer Networks and Distributed Systems		5 ECTS	E
Apr/May/June	Theoretical Computer Science and Mathematical Logic		5 ECTS	E
Apr/May/June	Introduction to Programming with Python		5 ECTS	E
Jun/Jul/Aug	Software Quality Assurance		5 ECTS	E
Jun/Jul/Aug	Specification		5 ECTS	E
Jun/Jul/Aug	Computer Science and Society		5 ECTS	WAWA
		5		
Oct/Nov/Dec	Cryptography		5 ECTS	E
Oct/Nov/Dec	Introduction to Data Protection and IT Security		5 ECTS	E
Oct/Nov/Dec	Agile Project Management		5 ECTS	WAPR
Jan/Feb/Mar	Seminar: Current Topics in Computer Science		5 ECTS	WARE
Jan/Feb/Mar	IT Law		5 ECTS	WACS
Jan/Feb/Mar	Project Software Engineering		5 ECTS	WAPR
		6		
Online	Elective A		10 ECTS	
Online	Elective B		10 ECTS	
Online	Bachelor Thesis		10 ECTS	WABT & PC

CHOOSE YOUR ELECTIVES

Choose one elective from

“Electives A” list*:

- Big Data and Cloud Technologies
- Business Intelligence
- IT Project and Architecture Management
- Mobile Software Engineering
- Salesforce Platform Development**
- Salesforce Platform Management**
- Software Engineering with Python

Choose one elective from

“Electives B” list*:

- Big Data and Cloud Technologies
- Business Intelligence
- Internship**
- IT Project and Architecture Management
- Mobile Software Engineering
- Salesforce Platform Development**
- Salesforce Platform Management**
- Software Engineering with Python
- Studium Generale**

ELECTIVES

All of our study programmes offer a wide selection of industry-focused electives for you to choose from. Below you'll find more details on a select number of these courses—for the full list of electives available in this programme, please check the Course Schedule.

The electives that are a part of this study programme, are a cluster of courses dedicated to diving deep into a specific topic related to the programme. When choosing an elective, you get to explore a potential future career path, or just develop a strong knowledge base about a topic that particularly interests you.

In semesters 5 of this programme, you'll choose two electives, amounting to 20 ECTS. You have a wide range of options to choose from, according to your interests and ambitions. Some of the electives offered are:

BUSINESS INTELLIGENCE

The Business Intelligence (BI) specialisation offers a selection of topics discussing how companies generate business data, and use it to improve and optimize operations. You'll be introduced to models and processes retaining to data analysis, generation and storing, and learn how these types of data are used across a company's different departments.

MOBILE SOFTWARE ENGINEERING

Your introduction to mobile software development. In the Mobile Software Engineering specialisation, you'll get hands-on experience in developing mobile software systems, in an Android mobile environment. Analyse the differences between mobile apps and browser-based information systems, learn how to create mobile software systems and implement them in solving case studies. Build your knowledge of the programming concepts and technologies that make up mobile software building, and develop your cross-platform development skills.

CAREER OUTLOOK

If you are a problem solver considering a Bachelor, Computer Science offers promising career prospects, whether in the private sector, public service or freelance. After finishing your online degree, you could support many different industries with programming or business intelligence, such as finance, automotive, commerce or engineering.

BUSINESS ANALYST

As a Business Analyst, you are responsible for business processes and task management. This means analysing and prioritising all processes and system tasks, in order to offer scientific solutions from the perspective of both the company and the customer. To achieve this, you identify existing issues and draw up concepts and IT guidelines to solve them.

SOFTWARE DEVELOPER

As a Software Developer, you conceptualise and develop software—from individual building blocks all the way to complete applications. In cooperation with different departments, you program purpose-built solutions to specific user demands and requirements. You always keep scientific conditions in mind and ensure that these are adhered to.

PROJECT LEADER IN SOFTWARE DEVELOPMENT

The function of a Project Leader is one of the most important factors for success when it comes to introducing software. In this way, you work at the interface between the customer and the company that develops the software. To this end, you make sure that the collaboration between different departments during the work process is effortless and efficient. In this context, you take on the role of the responsible project manager, who ensures that everything runs smoothly.

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

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