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.)

Study start
Start (online studies): Anytime
Start (on campus): each October and April

Study model and accreditation
– Online studies or On Campus
– German accredited institution, recognised by ZFU
  (German Central Office for Distance Learning)

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

Credits
180 ECTS credits

Apply Now

iu INTERNATIONAL UNIVERSITY OF APPLIED SCIENCES

Study Content (180 ECTS credits)

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

AWB = Advanced Workbook, BWB = Basic Workbook, BG = Business Game CWB = Creative Workbook, OA = Oral Assignment, CS = Case Study, WA = Written Assignment, E = Exam, E/OA = Exam or Oral Assignment, E/CS = Exam or Case Study, E/WA = Exam or Written Assignment, E/AWB = Exam or Advanced Workbook, ME = Module Exam, PO = Portfolio, PP = Proof of Participation, PR = Project Report, OPR = Oral Project Report, RE = Research Essay, T = Thesis, CO = Colloquium

*Each elective module can only be chosen once.
**These electives cannot be taken if you would like to receive a dual degree. The elective Internship is only available for myStudies students.

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 credits. 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 import 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 your 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)

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

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