UE | INNOVATION HUB

experience. innovation.

by the University of Europe for Applied Sciences

Study Software Engineering, BSc at UE Innovation Hub

a new Berlin-Potsdam campus
for digital pioneers of tomorrow

Why study at UE Innovation Hub?

Future of education

At UE Innovation Hub we focus on future technology and educate the leaders of tomorrow in a newly designed institution that enables you to learn in the most up-to-date educational environment.

Highly skilled lecturers

Our lecturers at UE Innovation Hub are thought leaders and highly skilled professionals with years of industry experience that you will benefit from.

Service & Guidance

We support you in reaching your career ambitions and provide key networking opportunities. Our UE Career Center helps you finding an internship, part-time student work or a career in your chosen field.

Interdisciplinary programmes

We believe the future is a combination of tech, data & design. Our programmes at UE Innovation Hub offer a unique module mix that will be necessary to succeed in tomorrow's job market.

Diverse atmosphere

Benefit from diverse network of students and lecturers at UE Innovation Hub. Our English taught programmes attract students from around the world. Explore Potsdam and Berlin with your fellow students.

Industry integrated

All our master's programmes are structured so that at least one module will be held in collaboration with a corporate partner. This will help you to gain valuable industry knowledge.
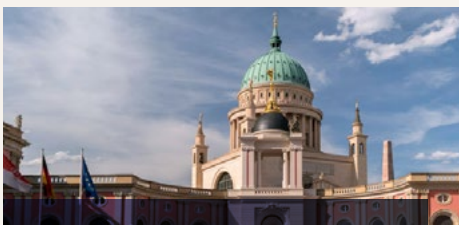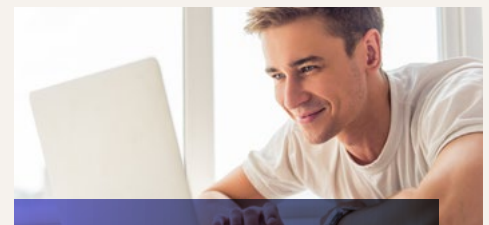
Potsdam - the science hot spot

Potsdam offers the highest density of scientists in Germany. Our campus is next to incubators such as SAP innovation center where over 200 people research AI and Blockchain technologies.
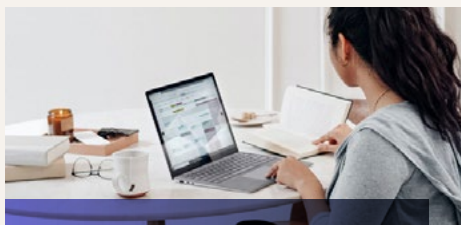
Study guarantee

We guarantee that you can start your studies online and continue on campus once COVID-19 government guidelines allow.

Innovative learning

You decide how you wish to learn. Either on campus, online / hybrid or via VR-teaching. Whatever your chosen teaching method, you will be learning the most up-to-date industry skills.

Your career starts with **Software Engineering, BSc**

Why study this programme?

Studying Software Engineering at the University of Europe for Applied Sciences will provide you with the latest industry skills and prepare you to enter the job market of tomorrow. Combining theory with practice, nearly all our courses are taught in state-of-the art computer labs with focusing on completing real-time working projects with corporate partners at the end of the semester. This study programme is aimed specifically at ambitious students who have the creative mindset and passion to learn something and develop software that will have a true impact on people's lives.

Your career prospects

Software developer | Front end back developer | Artificial intelligence expert | Full stack developer | Data analyst | Cloud expert | Software designer

Degree:
Bachelor of Science (BSc)

Duration, Credits:
6 Semesters, 180 ECTS

Start of studies:
Winter Semester - September
Summer Semester - March

Teaching language:
English

Offers:
Study abroad / Internship

Locations:
Berlin - Potsdam UE Innovation Hub

Admission limitations:
Proof of Academic and / or vocational experience in Computer Science gained (3 years min.)

Modules

Software Engineering, BSc

1st Semester	2nd Semester	3rd Semester	4th Semester	5th Semester
Programming • algorithm and data structure • object oriented programming using Python • sorting, searching • tree, stack, graphs, etc.	**Big Data & Analytics** • relational data base • SQL My SQL • big data characteristic and sources • data analytics and techniques • R programming languages	**IT Platform** • networking principles • networking components • network protocols, TCP/IP-ISO • IT service management • docker/virtual machine/cloud systems	**Artificial Intelligence** • Mars, trees and forest decision • super vector machine • naive bayes • AI applications using Python • text and image recognition	**Internship / Semester Abroad**
Computer Architectures • processors, memory types, counters • main components of the computers • HHD, SSD, optical disks • interrupts and threads	**Software Engineering 1** • planning and project management • requirement specification • intro to software modelling • clean coding/software quality	**Cloud Computing & Distributed Systems** • implementation of distributed systems • grid computing, cluster computing • super computing • AWS, Azure; Google clouds	**IT Agile Development** • agile methodologies • product owner, team member • Scrum and Kanban • using Jira and Confluence	
Start-up Management • the importance of innovation • idea generation-small and SME • cooperation and network management • industry analyses and case studies	**Backend Development** • design and build relation data base • high quality object oriented programming • build micro services applications, APIs • design GUI using Java	**Digital Media & Communication** • awareness of the media • basics on digitization and media • basics and models of communication • media competence knowledge	**IT Security & Crypto Technologies** • IT security management • malware and attack detection and prevision • RSA crypto system • block chain technology	**6th Semester**
Management Basics • decision theory • fundamentals of business administration • process management • project management	**GUI Design & Web Optimization** • web page design principles • GUI design requirement • search engine optimization • Google analytics, Facebook…	**Software Engineering 2** • software modelling techniques • object oriented software design • UML language • domain driven design principles	**Advanced Programming** • the fundamentals of web programming • HTML, CSS and JavaScrip • responsive website, bootstrap, etc. • mobile app development • iOS, Android	**Thesis & Colloquium**
Mathematics & Statistics • linear algebra, linear systems of equations • matrix calculation, linear optimization • differential calculus • descriptive evaluation methods • process management • project management	**Parallel Programming** • multi core processors programming • thread and multi threading • single and shared memory programming • MPI, POSIX IEEE, and C and Matlab	**Software Testing & Software Quality** • black/white box testing • static/automated testing • performance testing • software quality and performance	**Machine Learning & Smart Systems** • machine learning application • deep learning and neural networks • using Python programming • Python libraries like NumPy, SciPy, Scikit	
Business English • recognize and master the stylistic forms in TOEFT and IELTS • understand and utilize professional terminology	**Quantitative & Qualitative Methods** • location and object determination • general research strategies and application • hypothesis development and evaluation • qualitative and quantitative data	**Operating Systems** • the fundamental structure • Windows/iOS/Linux OS • mobile OS • system calls/interrupt/interconnection	**Corporate Management** • business development • strategic management • strategy process/planning • external business analysis	

■ Specialized Modules   □ Faculty-wide Modules   □ University-wide Modules

Your University - Your Partner!

The University of Europe for Applied Sciences (UE) is a state-approved private university that educates the designers and decision makers of tomorrow in the fields of business, psychology, media and communication, sport and event management and art and design.

With campuses in Iserlohn, Berlin and Hamburg, and new Innovation hub in Potsdam, UE offers undergraduate and postgraduate programmes tailored to the requirements of the job market 4.0.

Apply now at www.ue-germany.com/innovation-hub

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