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# BACHELOR (B.ENG.) ROBOTICS

Mobility, healthcare, agriculture, and more—supply chains across the globe are becoming more and more dependent on robotic technology. Robots are creating faster, more efficient ways to design, construct, monitor, inspect, and transport with precision and agility. Robots may be programmed to take on many roles, yet industries still rely on talented professionals to design, test, and build this technology and ensure safety and reliability. Robotics is a huge and rapidly growing market, with vast career potential for those with the right expertise.

The IU Bachelor in Robotics combines know-how from mechanical, electrical, and control engineering with the basics of computer science, data science, and artificial intelligence. Through our mix of theoretical principles and practical projects, you will acquire all the necessary skills to build a career as a robotics specialist. Our programme prepares you with relevant technical skills, hands-on experience, and contextual knowledge of the latest technology and industry trends. Gain a solid foundation in the fundamentals of robotics and expert insights into the Internet of Things (IoT) and automation.



## Degree

Bachelor of Engineering (B.Eng.)



## Study start

Start online studies: Anytime

Start (on campus): October 2022\*

(then 4 times a year; Oct, Jan, Apr or Jul)



## Study model available

Online, or On Campus



## Duration

Online: 36, 48, or 72 months

On Campus: 36 months



## Credits

180 ECTS



## Ultimate flexibility

Our On Campus model means that...

- You can start your degree online for distance learning while taking care of visa issues and join us later in Germany to experience campus life. You say which semester you want to spend on campus or online.
- You want to go on a trip during your studies? No problem. You can study online at your own pace without missing any classes.



## Fees

Online: From €75 per month

On Campus: From €349 per month

\*Subject to approval by the Thuringian Ministry of Economy, Science and Digital Society. We expect the Ministry's approval no later than the start of the studies. So far, the approval has always been on time.

## Study Content (180 ECTS)

PRESENCE TIMEFRAME	MODULE TITLE	SEMESTER	CREDITS (ECTS)	TEST TYPE
		<b>1</b>		
Oct/Nov/Dec	Introduction to Robotics		5 ECTS	E/WAWA
Oct/Nov/Dec	Mathematics II		5 ECTS	E
Oct/Nov/Dec	Scientific and Technical Fundamentals		5 ECTS	E
Jan/Feb/Mar	Introduction to Academic Work		5 ECTS	BWB
Jan/Feb/Mar	Technical Drawing		5 ECTS	E
Jan/Feb/Mar	Mathematics: Analysis		5 ECTS	E
		<b>2</b>		
Apr/May	Mathematics: Linear Algebra		5 ECTS	E
Apr/May	Mechanics – Statics		5 ECTS	E
Apr/May	Signals and Systems		5 ECTS	E
Jul/Aug	Production Engineering		5 ECTS	E
Jul/Aug	Introduction to Programming with Python		5 ECTS	E
Jul/Aug	Mechanics – Kinematics		5 ECTS	E
		<b>3</b>		
Oct/Nov/Dec	Project: Design with CAD		5 ECTS	OPR
Oct/Nov/Dec	Mechanics – Dynamics		5 ECTS	E
Oct/Nov/Dec	Programming with C/C++		5 ECTS	P
Jan/Feb/Mar	Electrical Engineering		5 ECTS	E
Jan/Feb/Mar	Sensor Technology		5 ECTS	E
Jan/Feb/Mar	Collaborative Work		5 ECTS	OA
		<b>4</b>		
Apr/May	Mechatronic Systems		5 ECTS	E
Apr/May	Control Systems Engineering		5 ECTS	E
Apr/May	Project: Robotics		5 ECTS	OPR
Jul/Aug	Embedded Systems		5 ECTS	E
Jul/Aug	Project: Applied Robotics with Robotic Platforms		5 ECTS	OPR
Jul/Aug	Seminar: Robots and Society		5 ECTS	WARE
		<b>5</b>		
Oct/Nov/Dec	Project: Modeling and Simulation of Robots		5 ECTS	WAPR
Oct/Nov/Dec	Project: Introduction to Robot Control		5 ECTS	WAPR
Online	Elective A		10 ECTS	
Jan/Feb/Mar	Seminar: Human-Robot Interaction		5 ECTS	WARE
Online	Elective B		10 ECTS	
		<b>6</b>		
Apr/May	Safety of Industrial Plants and Machines		5 ECTS	E
Online	Elective C		10 ECTS	
Online	Thesis & Colloquium		10 ECTS	WABT + PC

## CHOOSE YOUR ELECTIVES

### Choose one elective from “Electives A” list:

- Industrial Robotics and Automation
- Introduction to Cognitive Robotics
- Service Robotics

### Choose two electives from “Electives B & C” list:

- AI Specialist
- Autonomous Driving
- Data Science and Deep Learning
- Foreign Language French
- Foreign Language Italian
- Foreign Language Spanish
- German Language
- Industrial Robotics and Automation
- Introduction to Cognitive Robotics
- IT Security
- Mobile Software Engineering
- Python for Software Engineering
- Service Robotics
- Studium Generale