

Computer Science and Engineering, Degree Programme in Digitalisation, Computing and Electronics, (BSc, Tech) 2021-2022 - IBPCSEDICE2021

Code

IBPCSEDICE2021

Validity

1.8.2021 -

Educational level

Bachelor's Programmes

ECTS credits

180

Duration (years)

3

Language

Specifications

Degree

Bachelor of Science (Technology)

Degree title

Programme

-

Major subject

-

Classification code

-

Type

-

Group

-

Tags

-

Person in charge

Riku Hietaniemi

Organization unit

Faculty of Information Technology and Electrical Engineering

Description**Description**

The Degree Programme in Digitalisation, Computing and Electronics (DICE) focuses on providing a wide range of skills and knowledge needed in research, product development, and production of computer-based devices, services and systems including, for example, expertise for developing solutions to artificial intelligence based data analysis, Internet of Things, and interactive systems. The programme is based on the latest research excellence and prepares students to apply their skills in working life, and gives them tools for continuous learning as well.

Further information**Curriculum development and working life cooperation****Objectives**

After performing the BSc studies in the degree programme, a student

- knows the essential concepts, methods, and technologies in Information and Communication Technologies (ICT)
- can use and apply the acquired knowledge in a creative and critical manner in their work
- can use information technology tools and communication skills in solving problems in their field of study
- is able to work responsibly both independently and as a team member, and can communicate clearly to international audience both literally and verbally
- has the abilities required for master's studies and continuous professional development.

After completing the MSc in Computer Science and Engineering studies a student

- can work as an expert of computer science and engineering in international communities
- masters profoundly and diversely the concepts, theory, and methods related to the selected orientation, and knows the basics in the fields of the complementary and optional studies
- can apply the acquired knowledge in a creative manner in research, development and management
- masters the communication and collaboration skills needed in working life
- can conduct scientific research and create new knowledge for the needs of the companies and the society
- has the abilities required for postgraduate studies and continuous professional development.

Structure**Code****Name****Credits****Computer Science and Engineering, Degree Programme in**

IBPCSEDICE2021	Digitalisation, Computing and Electronics, (BSc, Tech) 2021-2022	180
IBPCSEDICE2021-1001	Multidisciplinary Studies	75
IBPCSEDICE2021-1002	Language, Communication and Orientation Studies	10
521099P	Orientation for DICE students	3
902168Y	Professional Communication for Technology (CSE)	5
IBPCSEDICE2021-1005	Second Official Language or Foreign Language	2
IBPCSEDICE2021-1003	Second Official Language	2
901049Y	Second Official Language (Swedish), Oral Skills	1
901048Y	Second Official Language (Swedish), Written Skills	1
900081Y	Second Official Language (Finnish), Written Skills	1
900082Y	Second Official Language (Finnish), Oral Skills	1
901060Y	Second Official Language (Swedish), Written Skills	1
901061Y	Second Official Language (Swedish), Oral Skills	1
IBPCSEDICE2021-1004	Foreign Language	2
900017Y	Survival Finnish	2
IBPCSEDICE2021-1006	Compulsory Basic and Intermediate Studies	65
521141P	Elementary Programming	5
031010P	Calculus I	5
811102P	Devices and Data Networks	5
811103P	Introduction to Software Engineering	5
031078P	Matrix Algebra	5
521077P	Introduction to Electronics	5
811322A	Programming 2	5
031075P	Calculus II	5
031021P	Probability and Mathematical Statistics	5
521150A	Introduction to Internet	5
521100A	Practical training for DICE students	5
521160P	Introduction to Artificial Intelligence	5
811397A	Basics of Project Work	5
IBPCSEDICE2021-1011	Computer Science and Engineering specialisation	95
521159P	<i>Principles of Digital Fabrication</i>	5
031023P	<i>Mathematical Structures for Computer Science</i>	5
031077P	<i>Complex analysis</i>	5
811325A	<i>Databases</i>	5
811312A	<i>Data Structures and Algorithms</i>	5
031080A	<i>Signal Analysis</i>	5
521145A	<i>Human-Computer Interaction</i>	5
521457A	<i>Software Engineering</i>	5
521337A	<i>Digital Filters</i>	5

521293A	<i>Introduction to XR Systems</i>	5
521453A	<i>Operating Systems</i>	5
521040A	<i>3D Virtual Environments and Applications</i>	5
811168P	<i>Information Security</i>	5
521242A	<i>Introduction to Biomedical Engineering</i>	5
811166P	<i>Fundamentals to Information Systems</i>	5
521495A	<i>Artificial Intelligence</i>	5
521046A	<i>Mobile Computing</i>	5
521157A	<i>Introduction to Social Network Analysis</i>	5
521467A	<i>Digital Image Processing</i>	5
IBPCSEDICE2021-1012 Bachelor Thesis and Communication		10
521101A	<i>Bachelor's Thesis / DICE</i>	10
521008A	<i>Computer Science and Engineering, The Maturity Test for Bachelor's Degree</i>	0