

# Information Processing Science, Degree Programme in Digitalisation, Computing and Electronics BSc 2021-2022 - IBPIPSDICE2021

**Code**

IBPIPSDICE2021

**Validity**

1.8.2021 -

**Educational level**

Bachelor's Programmes

**ECTS credits**

180

**Duration (years)**

3

**Language**

English

## Specifications

**Degree**

Bachelor of Science

**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**

University level studies in Information Processing Science provide an excellent foundation to work in anywhere where information and communications technology is developed and applied. The field is becoming more international and continues to develop rapidly, and there is considerable demand for experts. Education focuses on software and information systems, as well as the areas of expertise and applications that deepen them. The skills relevant to working life, such as project work, written and oral communication, critical thinking and problem solving, are advanced at the same time. Minor subjects, such as statistics, mathematics, engineering, management, economics or psychology, are used to complement studies to desired application area.

After completing the Bachelor of Science (BSc) degree, a student is able to:

- evaluate, select and apply a variety methods, techniques, and tools used in the design, implementation, and deployment of software and information systems and related services,
- design and implement software, information systems and services based on them as a project,
- carry out a literature study with scientific approach, as well as
- communicate orally and literary taking into account the target audience.

After completing the Master of Science (MSc) degree, a student is able to

- apply existing and produce new knowledge in information processing science to the need of companies and other organisations,
- act as an independent expert in software and information system projects and manage them professionally,
- apply the typical research methods and select the most appropriate data collection and analysis methods to solve a specified research problem,
- develop working methods and practices in their field using a scientific approach, as well as
- communicate the results clearly and analytically following the scientific practice.

**Structure**

Code	Name	Credits
<b>IBPIPSDICE2021</b>	<b>Information Processing Science, Degree Programme in Digitalisation, Computing and Electronics BSc 2021-2022</b>	<b>182</b>
IBPIPSDICE2021-1001	Multidisciplinary Studies	77
<b>IBPIPSDICE2021-1002</b>		<b>8</b>
521099P	Orientation for DICE students	3
902164Y	English Communication for Information Processing, Reading	2
902165Y	English Communication for Information Processing, Oral Skills	3
<b>IBPIPSDICE2021-1003</b>	<b>Second Official Language or Foreign Language</b>	<b>2</b>
901048Y	Second Official Language (Swedish), Written Skills	1
901049Y	Second Official Language (Swedish), Oral 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
<b>IBPIPSDICE2021-1004</b>	<b>Foreign Language</b>	<b>2</b>
900017Y	Survival Finnish	2
<b>IBPIPSDICE2021-1005</b>		<b>65</b>
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
IBPIPSDICE2021-1006	Information Processing Science specialisation	95
811391A	<i>Requirements Engineering</i>	5
811301A	<i>Software Modeling and Design</i>	5
811325A	<i>Databases</i>	5
031023P	<i>Mathematical Structures for Computer Science</i>	5
811306A	<i>Software Quality and Testing</i>	5
811312A	<i>Data Structures and Algorithms</i>	5
811166P	<i>Fundamentals to Information Systems</i>	5
811319A	<i>Data Modeling and Design</i>	5

811367A	<i>Programming 3</i>	5
811174P	<i>Introduction to Software Business</i>	5
811368A	<i>Programming 4</i>	5
812360A	<i>Information Systems Modelling, Desing and Development</i>	5
812363A	<i>Human-Centered Desing</i>	5
811168P	<i>Information Security</i>	5
812361A	<i>Information Systems Acquisition, Deployment and Management</i>	5
812362A	<i>Business Process Management and Modelling</i>	5
811393A	<i>Introduction to research work</i>	5
815345A	<i>Software Architectures</i>	5
812364A	<i>Data Analytics and Business Inetelligence</i>	5
IBPIPSDICE2021-1007		10
521101A	<i>Bachelor's Thesis / DICE</i>	10
813307A	<i>IPS (TOL), Maturity Test for Bachelor 's Degree</i>	0