

# Computer Science

Faculty of Information Technologies  
Bachelor study programme



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## Study Programme Description

<b>Name of the study programme in English</b>	Computer Science
<b>Name of the study programme in Latvian</b>	Datorzinātnes
<b>Level of the study programme</b>	Bachelor study programme
<b>Study time</b>	3 years (6 semesters)
<b>KP</b>	120 KP (180 ECTS)
<b>Type of the study programme</b>	Full time studies
<b>Education requirement</b>	General secondary or vocational education
<b>International tests and entrance examinations</b>	<ul style="list-style-type: none"><li>• Exam in English<sup>1</sup></li><li>• Exam in math</li></ul>
<b>Tuition fee</b>	2270 EUR per year <sup>2</sup>
<b>State funded places</b>	Available <sup>3</sup>

<sup>1</sup> if the applicant has not passed English language test of an international testing institution

<sup>2</sup>The tuition fee may be paid in two equal instalments, except for the first study year, which requires the tuition fee to be paid in full.

<sup>3</sup> Only available to Applicants who are citizens of EU/EEA countries.

## Study-aim

To prepare highly skilled specialists in computer science with fundamental knowledge in computer science, advanced mathematics, and engineering that allows independent adaptation to professional activities in changing labour market conditions, and to prepare students for further studies in professional programmes of a higher level, master's studies, scientific work and further self-education.

## Study-tasks

To provide students with the necessary theoretical and practical knowledge in computer science; to accustom students to independent learning, evaluation, and application of the latest developments in the computer industry; to develop students' scientific analysis abilities and independent problem solving skills; to encourage their involvement in solving practical and scientific problems; to motivate the students and facilitate the satisfaction of their needs for further education, including continuing studies in professional and academic master's or doctoral study programmes; to provide qualified teaching staff and modern training in the study process; to provide students with an environment and conditions conducive to creative learning.

## Study programme content

No.	Title in English	Title in Latvian	ECTS
<b>Compulsory part</b>			<b>117</b>
<b>Field basic guidelines (comp. part)</b>			<b>45</b>
1	Mathematical Analysis I	Matemātiskā analīze I	6
2	Mathematical Analysis II	Matemātiskā analīze II	3
3	Linear Algebra un Analytical Geometry I	Lineārā algebra un analītiskā ģeometrija I	3
4	Linear Algebra un Analytical Geometry II	Lineārā algebra un analītiskā ģeometrija II	3
5	Mathematical Logic	Matemātiskā loģika	3
6	Discrete Mathematics	Diskrētā matemātika	3
7	Data Structures and Algorithms	Datu struktūras un pamatalgoritmi	3
8	Theory of Algorithms	Algoritmu teorija	3
9	Probability Theory and Mathematical Statistics	Varbūtību teorija un matemātiskā statistika	3
10	Differential Equations	Diferenciālvienādojumi	3
11	Numerical Methods	Skaitliskās metodes	3
12	Optimisation Methods	Optimizācijas metodes	3
13	Object Oriented Modelling	Objektorientētā modelēšana	3
14	Modeling of Chaotic Processes	Haotisko procesu modelēšana	3
<b>Actual problems of the field (comp. part)</b>			<b>42</b>
15	Basics of Computer Science	Datorzinātņu pamati	6
16	Programming	Programmēšana	6
17	Object Oriented Programming	Objektorientētā programmēšana	6
18	JAVA Programming	Programmēšana tīmeklī (JAVA)	6
19	Visual Programming Languages	Vizuālās programmēšanas valodas	6
20	Information Systems Analysis and Design	IS analīze un projektēšana	6
21	Case Tools	Programmu izstrādes rīki un vides	6
<b>Interdisciplinary aspects (comp. part)</b>			<b>30</b>
22	Fundamentals of the Latvian Language I	Latviešu valodas pamati I	3
23	Fundamentals of the Latvian Language II	Latviešu valodas pamati II	3
24	Introduction to Business	Uzņēmējdarbības pamati	3
25	Fundamentals of Economics	Ekonomikas pamati	3
26	Basics of Information Technologies Law	Nozares tiesību pamati	3

27	Physics I	Fizika I	3
28	Physics II	Fizika II	3
29	Electronics	Elektronika	6
30	Labour Safety and Environment and Civil Protection	Darba drošība un vides un civilā aizsardzība	3
<b>Compulsory elective courses</b>			<b>39</b>
31	Fundamentals of GIS and Digital Cartography	Digitālā kartogrāfija un GIS	6
32	Computer Graphics	Datorgrafika	3
33	Operating Systems	Operētājsistēmas	6
34	Network Operating Systems	Tīklu operētājsistēmas	3
35	Database Technologies	Datu bāzu tehnoloģijas	6
36	Computer Systems Hardware and Architecture	Datorsistēmu arhitektūra un uzbūve	3
37	Local Area Networks Designing and Administration	LAN projektēšana un administrēšana	6
38	WWW Technologies	Tīmekļa tehnoloģijas	3
39	Information Systems Security	IS drošība	3
40	Basics of Programmable Logic Controllers	Programmkontrolieru pamati	3
41	Mathematical modelling	Matemātiskā modelēšana	6
42	Introduction to computer processing of satellite images	Ievads satelītattēlu apstrādē	6
43	AB SUITE programming environment	AB SUITE programmēšanas vide	6
44	Web page programming	Web aplikāciju izstrāde	3
<b>Internship and individual work</b>			<b>15</b>
45	Internship	Prakse	18
46	Bachelor paper	Bakalaura darbs	15
<b>Optional courses</b>			<b>9</b>
<b>Total</b>			<b>180</b>

## Study plan

No.	Title in English	ECTS	Semester						Form of evaluation
			I	II	III	IV	V	VI	
<b>General study courses</b>		<b>45</b>							
1	Mathematical Analysis I	6	6						Examination
2	Mathematical Analysis II	3		3					Examination
3	Linear Algebra un Analytical Geometry I	3	3						Examination
4	Linear Algebra un Analytical Geometry II	3		3					Examination
5	Mathematical Logic	3	3						Examination
6	Discrete Mathematics	3		3					Examination
7	Data Structures and Algorithms	3				3			Examination
8	Theory of Algorithms	3			3				Examination
9	Probability Theory and Mathematical Statistics	3			3				Examination
10	Differential Equations	3			3				Examination
11	Numerical Methods	3					3		Examination
12	Optimisation Methods	3				3			Examination
13	Object Oriented Modelling	3					3		Examination
14	Modeling of Chaotic Processes	3				3			Examination
<b>Field related study courses</b>		<b>135</b>							
<b>Actual problems of the field (comp.part)</b>		<b>42</b>							
15	Basics of Computer Science	6	6						Examination
16	Programming	6		6					Examination
17	Object Oriented Programming	6			6				Examination
18	JAVA Programming	6				6			Examination
19	Visual Programming Languages	6					6		Examination
20	Information Systems Analysis and Design	6				6			Examination
21	Case Tools	6					6		Examination
<b>Interdisciplinary aspects (comp.part)</b>		<b>30</b>							
22	Fundamentals of the Latvian Language I	3	3						Test
23	Fundamentals of the Latvian Language II	3		3					Test
24	Introduction to Business	3			3				Examination
25	Fundamentals of Economics	3				3			Test
26	Basics of Information Technologies Law	3					3		Examination
27	Physics I	3	3						Examination

28	Physics II	3		3					Examination
29	Electronics	6			6				Examination
30	Labour Safety and Environment and Civil Protection	3	3						Test
<b>Compulsory elective courses</b>		<b>39</b>							
31	Fundamentals of GIS and Digital Cartography	6			3	3			Examination
32	Computer Graphics	3				3			Examination
33	Operating Systems	6		6					Examination
34	Network Operating Systems	3				3			Examination
35	Database Technologies	6					6		Examination
36	Computer Systems Hardware and Architecture	3	3						Examination
37	Local Area Networks Designing and Administration	6			6				Examination
38	WWW Technologies	3				3			Examination
39	Information Systems Security	3						3	Examination
40	Basics of Programmable Logic Controllers	3					3		Test
41	Mathematical modelling	6						6	Test
42	Introduction to computer processing of satellite images	6						6	Examination
43	AB SUITE programming environment	6						6	Examination
44	Web page programming	3						3	Examination
<b>Internship and individual work</b>		<b>15</b>							
45	Internship	12						12	Defence
46	Bachelor paper	15						15	Defence
<b>Optional courses</b>		<b>9</b>							
	<b>Total</b>	<b>9</b>		<b>3</b>			<b>3</b>	<b>3</b>	<b>Test</b>
<b>Total</b>		<b>180</b>							

## How to apply

The candidate must complete the online application form <http://application.venta.lv/> and attach the following documents:

- **Documents of Secondary or Higher education.** The average grade should be at least 60%. Original documents in English, German, French or Russian may be submitted. All other languages must be translated into English. Translations need to be notary attested and certified.
- **IELTS (6.0 and over), TOEFL (PBT) 550 or (IBT) 70, London Language Test or Longman Language Test.** If the candidate has not passed an international English language test, the candidate ought to pass VUAS online English language test (achieving at least 60%) free of charge.
- **Curriculum Vitae** (resume);
- **A copy of the applicant's passport** (including a note "Submitted for use by Ventspils University of Applied Sciences", date and time);
- **One photo** 3 cm x 4 cm (JPEG format, not as a PDF)

Upon completing the online application form, the candidate should send a confirmation email to [international@venta.lv](mailto:international@venta.lv) before the application deadlines and confirm his/her willingness to pursue studies at Ventspils University of Applied Sciences.

More information: <https://venta.lv/en/>

## Contacts

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