



**Field of study: Computer Science**

**Level of education: 1st degree**

**Studies profile: General**

### Semester 1

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-I-EN-01-s1	HES 1	15	0	0	0	0	15	0	1
2.	E-I-0856-s1	Calculus and Linear Algebra	30	30	0	0	0	60	1	6
3.	E-I-0356-s1	Physics	15	15	15	0	0	45	0	4
4.	E-I-0393-s1	Fundamentals of Electronics	30	0	15	0	0	45	0	4
5.	E-I-0593-s1	Introduction to computer science	30	0	15	0	0	45	1	4
6.	E-I-0592-s1	Fundamentals of Programming 1	30	0	30	0	0	60	0	5
7.	E-I-0594-s1	Arithmetic and logic systems	30	15	15	0	0	60	1	6
8.		Occupational health and safety training	4	0	0	0	0	4	0	0

**TOTAL: 184 60 90 0 0 334 3 30**

### Semester 2

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-I-EN-01-s2	HES 2	30	0	0	0	0	30	0	2
2.	E-I-0888-s2	Probabilistic methods and statistics	30	30	0	0	0	60	1	5
3.	E-I-EN-03-s2	Fundamentals of Programming 2	30	0	30	15	0	75	0	5
4.	E-I-0628-s2	Programming in the C language 1	30	0	15	0	0	45	0	3
5.	E-I-0002-s2	Algorithms and data structures	30	30	0	15	0	75	1	6
6.	E-I-0597-s2	Computer architecture 1	30	0	30	0	0	60	1	5
7.	E-I-0676-s2	Digital measurements	30	0	15	0	0	45	0	4

**TOTAL: 210 60 90 30 0 390 3 30**



### Semester 3

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-I-0001-s3	Foreign Language 1	0	30	0	0	0	30	0	2
2.	E-I-0002-s3	Discrete mathematics	30	30	0	0	0	60	1	5
3.	E-I-0003-s3	Dynamic systems	15	0	15	0	0	30	0	2
4.	E-I-0004-s3	Programming in the C language 2	15	0	30	15	0	60	0	4
5.	E-I-0005-s3	Computer architecture 2	30	0	0	15	0	45	1	4
6.	E-I-0006-s3	Operating Systems 1	30	0	30	0	0	60	0	4
7.	E-I-0007-s3	Databases 1	30	0	30	0	0	60	1	5
8.	E-E-0011-s3	Microcontrollers programming 1	30	0	30	0	0	60	0	4

**TOTAL: 180 60 135 30 0 405 3 30**

### Semester 4

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-I-0001-s4	Foreign Language 2	0	30	0	0	0	30	0	2
2.	E-I-0007-s4	Protection of Intellectual Property	15	0	0	0	0	15	0	1
3.	E-I-0002-s4	Introduction to Networks	30	0	30	0	0	60	1	5
4.	E-I-0006-s4	Object-oriented programming (Java)	30	0	30	30	0	90	0	7
5.	E-I-0003-s4	Operating Systems 2	30	0	30	0	0	60	1	5
6.	E-I-0005-s4	Intelligent systems 1	30	15	0	0	0	45	1	4
7.	E-I-0004-s4	Databases 2	30	0	15	15	0	60	0	4
8.	E-E-1008-s4	Microcontrollers programming 2	0	0	0	15	0	15	0	1
9.		HES 3	15	0	0	0	0	15	0	1

**TOTAL: 180 45 105 60 0 390 3 30**

### Semester 5

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	specialist	Physical education 1	0	30	0	0	0	30	0	0
2.	specialist	Foreign Language 3	0	30	0	0	0	30	0	2
3.	specialist	Web Application Development 1	30	0	15	0	0	45	0	3
4.	specialist	Methods of computation	30	0	30	0	0	60	1	5
5.	specialist	Intelligent systems 2	0	0	0	30	0	30	0	2
6.	specialist	Concurrent Programming	30	0	30	0	0	60	0	4
7.	-	Mobile applications	30	0	15	15	0	60	0	4
8.	specialist	Circuits and Signals - faculty	0	0	0	0	0	0	0	0
9.		Mandatory specialist courses	60		90		0	150	2	10

**TOTAL: 180 150 90 45 0 465 3 30**



### Semester 6

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	specialist	Physical education 2	0	30	0	0	0	30	0	0
2.	specialist	Foreign Language 4	0	30	0	0	0	30	1	2
3.		HES 4	15	0	0	0	0	15	0	1
4.		Apprenticeships	0	0	0	0	0	0	0	4
5.		Mandatory specialist courses	105		165		0	270	2	17
6.		Selectable specialist courses	30		60		0	120	0	6

**TOTAL: 180 285 0 0 0 465 3 30**

### Semester 7

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	specialist	Diploma seminar	0	0	0	30	0	30	0	2
2.		Diploma project	0	0	0	0	0	0	1	15
3.	specialist	Occupational safety and ergonomics	15	0	0	0	0	15	0	1
4.		Mandatory specialist courses	30		45		0	75	0	6
5.		Selectable specialist courses	30		45		0	75	0	6

**TOTAL: 75 90 0 30 0 195 1 30**

### Course HES

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.		Legal basis of business activity	15					15		1
2.		History of economic thought	15					15		1
3.		Introduction to management	30					30		2
4.		Basics of economics	30					30		2
5.		History of technology	15					15		1
6.		The basics of internet marketing	15					15		1
7.		Interpersonal communication	15					15		1
8.		Negotiations in business	15					15		1
9.		History of technology and inventions	15					15		1
10.		Academic good manners	15					15		1
11.		History of music	15					15		1



### Specialization: Information systems

#### Semester 5

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1S-01-s5	Physical education 1	0	30	0	0	0	30	0	0
2.	E-ID1S-02-s6	Foreign Language 3	0	30	0	0	0	30	0	2
3.	E-ID1S-03-s5	Web Application Development 1	30	0	15	0	0	45	0	3
4.	E-ID1S-04-s5	Methods of computation	30	0	30	0	0	60	1	5
5.	E-ID1S-05-s5	Intelligent systems 2	0	0	0	30	0	30	0	2
6.	E-ID1S-06-s5	Concurrent Programming	30	0	30	0	0	60	0	4
7.	-	Mobile applications	30	0	15	15	0	60	0	4
8.	E-ID1S-09-s5	Circuits and Signals - faculty	0	0	0	0	0	0	0	0
		Mandatory specialist courses								
9.	E-ID1S-07-s5	Computer graphics	30	0	30	15	0	75	1	5
10.	E-ID1S-08-s5	Introduction to Software Engineering	30	0	30	15	0	75	1	5

**TOTAL: 180 60 150 75 0 465 3 30**

#### Semester 6

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1S-01-s6	Physical education 2	0	30	0	0	0	30	0	0
2.	E-ID1S-02-s6	Foreign Language 4	0	30	0	0	0	30	1	2
3.		HES 4	15	0	0	0	0	15	0	1
4.		Apprenticeships	0	0	0	0	0	0	0	4
		Mandatory specialist courses								
5.	E-ID1S-09-s6	Team project	0	0	0	45	0	45	0	3
6.	E-ID1S-03-s6	Web Application Development 2	15	0	0	30	0	45	1	3
7.	E-ID1S-04-s6	Information systems engineering	30	0	15	15	0	60	1	5
8.	E-ID1S-05-s6	Management Information Systems	30	0	30	0	0	60	0	3
9.	E-ID1S-06-s6	Modelling and analysis of business processes	30	30	0	0	0	60	0	3
10.		Selectable specialist course 1	30	0	30	0	0	60	0	3
11.		Selectable specialist course 2	30	0	30	0	0	60	0	3
		Multimedia Systems								
	E-ID1S-09-s6	User interface design								
	E-ID1S-07-s6	Computer Networks Administration								
	E-ID1S-11-s6	Programs of raster, vector and 3d graphics								
	E-ID1S-08-s6	Introduction to human-computer interaction								
		Modelling and visualization of physical processes								
		Computer systems security								

**TOTAL: 180 90 105 90 0 465 3 30**



### Semester 7

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1S-08-s7	Diploma seminar	0	0	0	30	0	30	0	2
2.		Diploma project	0	0	0	0	0	0	1	15
3.	E-ID1S-01-s7	Occupational safety and ergonomics	15	0	0	0	0	15	0	1
4.	E-ID1S-07-s7	Modern data processing systems	30	0	15	30	0	75	0	6
5.		Selectable specialist course 3	30	0	15	30	0	75	0	6
		Image processing								
	E-ID1G-06-s6	Computer graphics programming								
	E-ID1S-03-s7	Operations Research								
	E-ID1S-10-s7	Introduction to geoinformatics systems								
		Application of artificial neural networks in computer science								

**TOTAL: 75 0 30 90 0 195 1 30**



### Specialization: Computer Graphics

#### Semester 5

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1G-01-s5	Physical education 1	0	30	0	0	0	30	0	0
2.	E-ID1G-02-s6	Foreign Language 3	0	30	0	0	0	30	0	2
3.	E-ID1G-03-s5	Web Application Development 1	30	0	15	0	0	45	0	3
4.	E-ID1G-04-s5	Methods of computation	30	0	30	0	0	60	1	5
5.	E-ID1G-05-s5	Intelligent systems 2	0	0	0	30	0	30	0	2
6.	E-ID1G-06-s5	Concurrent Programming	30	0	30	0	0	60	0	4
7.		Mobile applications	30	0	15	15	0	60	0	4
8.	E-ID1G-09-s5	Circuits and Signals - faculty	0	0	0	0	0	0	0	0
		Mandatory specialist courses								
9.	E-ID1G-07-s5	Basics of the computer graphics	30	0	30	15	0	75	1	5
10.	E-ID1G-08-s5	Software Engineering	30	0	30	15	0	75	1	5

**TOTAL: 180 60 150 75 0 465 3 30**

#### Semestr 6

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1G-01-s6	Physical education 2	0	30	0	0	0	30	0	0
2.	E-ID1G-02-s6	Foreign Language 4	0	30	0	0	0	30	1	2
3.		HES 4	15	0	0	0	0	15	0	1
4.		Apprenticeships	0	0	0	0	0	0	0	4
		Mandatory specialist courses								
5.	E-ID1G-09-s6	Team project	0	0	0	45	0	45	0	3
6.	E-ID1G-03-s6	Algorithms for computer graphics	30	0	0	15	0	45	0	3
7.	E-ID1G-04-s6	Digital signal processing	30	0	30	0	0	60	0	3
8.	E-ID1G-05-s6	Architecture of graphics processor units	30	0	0	15	0	45	1	3
9.	E-ID1G-06-s6	Computer graphics programming	30	0	30	15	0	75	1	5
10.		Selectable specialist course 1	30	0	30	0	0	60	0	3
11.		Selectable specialist course 2	30	0	30	0	0	60	0	3
		A Basis of Composition								
		Knowledge of Plastic Form								
	E-ID1S-12-s6	Programs of raster graphics								
		Multimedia Systems								
	E-ID1G-09-s6	User interface design								
	E-ID1S-07-s6	Computer Networks Administration								
	E-ID1G-011-	Programs of raster, vector and 3d graphics								
	E-ID1G-08-s6	Introduction to human-computer interaction								
		Modelling and visualization of physical processes								

**TOTAL: 195 60 120 90 0 465 3 30**



### Semester 7

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1G-08-s7	Diploma seminar	0	0	0	30	0	30	0	2
2.		Diploma project	0	0	0	0	0	0	1	15
3.	E-ID1G-01-s7	Occupational safety and ergonomics	15	0	0	0	0	15	0	1
4.	E-ID2G-04-s3	Speech and Image Recognition Systems	30	0	0	45	0	75	0	6
5.		Selectable specialist course 3	30	0	15	30	0	75	0	6
	E-ID1G-03-s7	Operations Research								
		Multimedia networks								
		Information system of visual communication								
	E-ID1G-03-s7	Physics in animation and computer graphics								
	E-ID1G-07-s7	Modern data processing systems								
		Image processing								
	E-ID1G-10-s7	Introduction to geoinformatics systems								
		Application of artificial neural networks in computer science								

**TOTAL: 75 0 15 105 0 195 1 30**



### Specialization: Teleinformatic

#### Semester 5

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1T-01-s5	Physical education 1	0	30	0	0	0	30	0	0
2.	E-ID1T-01-s6	Foreign Language 3	0	30	0	0	0	30	0	2
3.	E-ID1T-03-s5	Web Application Development 1	30	0	15	0	0	45	0	3
4.	E-ID1T-04-s5	Methods of computation	30	0	30	0	0	60	1	5
5.	E-ID1T-05-s5	Intelligent systems 2	0	0	0	30	0	30	0	2
6.	E-ID1T-06-s5	Concurrent Programming	30	0	30	0	0	60	0	4
7.		Mobile applications	30	0	15	15	0	60	0	4
8.	E-ID1T-09-s5	Circuits and Signals - faculty	0	0	0	0	0	0	0	0
		Mandatory specialist courses								
9.	E-ID1T-07-s5	Routing and Switching Essentials	30	0	30	0	0	60	1	4
10.	E-ID1T-08-s5	Python Programming 1	15	0	30	0	0	45	0	3
11.	E-ID1T-09-s5	Internet of Things – Connecting things	15	0	30	0	0	45	0	3

**TOTAL: 180 60 180 45 0 465 2 30**

#### Semester 6

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1T-01-s6	Physical education 2	0	30	0	0	0	30	0	0
2.	E-ID1T-02-s6	Foreign Language 4	0	30	0	0	0	30	1	2
3.		HES 4	15	0	0	0	0	15	0	1
4.		Apprenticeships	0	0	0	0	0	0	0	4
		Mandatory specialist courses								
5.	E-ID1T-02-s6	Teleinformatic Networks Designing	30	0	30	0	0	60	1	4
6.	E-ID1T-03-s6	Internet of Things - Big Data & Analytics	15	0	30	15	0	60	0	3
7.	E-ID1T-04-s6	Accessing to WAN technologies	30	0	30	0	0	60	1	4
8.	E-ID1T-05-s6	Cybersecurity	15	0	30	0	0	45	0	3
9.	E-ID1T-06-s6	Network programming	0	0	0	45	0	45	0	3
10.		Selectable specialist course 1	30	0	30	0	0	60	0	3
11.		Selectable specialist course 2	30	0	30	0	0	60	0	3
		Linux Essentials 1								
		Programming in C++ 1								
		Digital signal processing								
	E-ID1T-10-s6	Python Programming 2								

**TOTAL: 165 60 180 60 0 465 3 30**





### Semester 7

No.	Course code	Course name	Lecture	Classes	Laboratory	Project	Other	Total	Exam	ECTS
1.	E-ID1T-08-s7	Diploma seminar	0	0	0	30	0	30	0	2
2.		Diploma project	0	0	0	0	0	0	1	15
3.	E-ID1T-01-s7	Occupational safety and ergonomics	15	0	0	0	0	15	0	1
4.	E-ID2G-04-s3	Speech and Image Recognition Systems	30	0	0	45	0	75	0	6
5.		Selectable specialist course 3	30	0	15	30	0	75	0	6
	E-ID1T-02-s7	Advanced in Teleinformatic Network Security								
		Linux Essentials 2								
		Programming in C++ 2								
		Semantic Web								

**TOTAL: 75 0 15 105 0 195 1 30**

No.	Semester	le	c	la	p	o	T [h]	ECTS
1.	Semester 1	184	60	90	0	0	334	30
2.	Semester 2	210	60	90	30	0	390	30
3.	Semester 3	180	60	135	30	0	405	30
4.	Semester 4	180	45	105	60	0	390	30
5.	Semester 5	180	150	90	45	0	465	30
6.	Semester 6	180	285	0	0	0	465	30
7.	Semester 7	75	90	0	30	0	195	30
<b>TOTAL:</b>		<b>1189</b>	<b>750</b>	<b>510</b>	<b>195</b>	<b>0</b>	<b>2644</b>	<b>210</b>