

Faculty Information and Communication Sciences

Undergraduate FIRST CYCLE OF STUDIES

Study program: Information and Communication Systems for Business and Management (ICSBM) 4 years

Active from academic 2018/2019

After completion of 4 years of studies, with 240 ECTS credits, students will get a degree of Bachelor of Science in Information Science and Technology in the field of Information and communication systems for business and management.

ICSBM 4 years

Year I				
Semester I				
No.	Code	Course Name	No. of classes	ECTS
Core Courses				
1	14.3.ICSBM.1101.C	Basics of economy 1	3+2	6
2	15.0.ICSBM.1102.C	Information and communication technologies	3+2	6
3	11.1.F.1102.C	Mathematics 1	3+2	6
4	11.3.F.1101.C	Introduction to Programming	3+2+2	6
Elective				
5	1 Course from Minor Elective List		3+2	6
Year I				
Semester II				
No.	Code	Course Name	No. of classes	ECTS
1	11.9.ICSBM.1203.C	Internet technologies	3+2	6
2	14.3.ICSBM.1202.C	Basics of economy 2	3+2	6
3	11.3.F.1201.C	Object Oriented Programming	3+2+2	6
4	11.9.ICSBM.1204.C	Economic mathematics	3+2	6
Elective				
5	1 Course from Minor Elective List		3+2	6

Year II				
Semester III				
No.	Code	Course Name	No. of classes	ECTS
1	04.0.ICSBM.1301.C	Principles of management	3+2	6
2	11.3.ICSBM.1302.C	Algorithms and data structures	3+2	6
3	11.3.ICSBM.1303.C	Relational databases	3+2	6
Two Major Elective courses from the provided list				
	04.2.ICSBM.1304.MaE	e-commerce	3+2	6
	04.7.ICSBM.1305.MaE	e-marketing	3+2	6
	04.9.ICSBM.1306.MaE	Management of technologies and innovations	3+2	6
Year II				
Semester IV				
No.	Code	Course Name	No. of classes	ECTS
1	11.3.ICSBM.1401.C	Web application development	3+2	6
2	10.9.ICSBM.1402.C	Business Law	3+2	6
3	11.2.ICSBM.1403.C	Business Statistics	3+2	6
Two Major Elective courses from the provided list				
	15.9.ICSBM.1404.MaE	Accounting Information System	3+2	6
	04.3.ICSBM.1405.MaE	Financial management	3+2	6
	11.1.ICSBM.1406.MaE	Numerical methods	3+2	6
Year III				
Semester V				
No.	Code	Course Name	No. of classes	ECTS
1	11.3.ICSBM.1501.C	Business intelligence	3+2	6
2	11.3.ICSBM.1502.C	Software Engineering	3+2	6
3	11.3.ICSBM.1503.C	Communication protocols	3+2	6

Two Major Elective courses from the provided list				
	15.9.ICSBM.1504.MaE	Business Information Systems	3+2	6
	04.9.ICSBM.1505.MaE	Project management	3+2	6
	04.9.ICSBM.1506.MaE	Entrepreneurship	3+2	6
	10.9.ICSBM.1507.MaE	Legal regulation of the information society	3+2	6
Year III				
Semester VI				
No.	Code	Course Name	No. of classes	ECTS
1	11.3.ICSBM.1601.C	Operative system	3+2	6
2	11.9.ICSBM.1602.C	Mathematics of decision making	3+2	6
Two Major Elective courses from the provided list				
	04.2.ICSBM.1603.MaE	e-banking	3+2	6
	11.3.ICSBM.1604.MaE	Pattern Recognition	3+2	6
	11.3.ICSBM.1605.MaE	NoSQL Databases	3+2	6
	11.3.ICSBM.1606.MaE	Human-Computer Interaction (HCI)	3+2	6
Electives				
5	1 Course from Minor Elective List		3+2	6

Year IV				
Semester VII				
No.	Code	Course Name	No. of classes	ECTS
1	15.9.ICSBM.1701.C	ICT business models	3+2	6
2	04.2.ICSBM.1702.C	Development of e-business systems	3+2	6
Two Major Elective courses from the provided list				
	11.3.ICSBM.1703.MaE	Multiplatform programming	3+2	6
	04.9.ICSBM.1704.MaE	Market analysis	3+2	6
	11.9.ICSBM.1705.MaE	Security and privacy of data	3+2	6
	04.9.ICSBM.1706.MaE	Research methods for business	3+2	6
Electives				
5	1 Course from Minor Elective List		3+2	6

Year IV				
Semester VIII				
No.	Code	Course Name	No. of classes	ECTS
1	11.3.ICSBM.1801.C	Machine learning	3+2	6
2	15.9.ICSBM.1802.C	ERP systems	3+2	6
3	11.9.ICSBM.1803.C	Diploma Work	3+2	6
Two Major Elective courses from the provided list				
	04.7.ICSBM.1804.MaE	Consumer, market and industry research	3+2	6
	15.9.ICSBM.1805.MaE	Media and communications	3+2	6
	04.9.ICSBM.1806.MaE	Innovative e-business management and marketing	3+2	6
	11.3.ICSBM.1807.MaE	Engineering of data, information and knowledge	3+2	6
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The first cycle of university studies recognizes the modules:

- C - mandatory (core),
- MR - mandatory specific to the faculty,
- MaE - elected from the scientific field of the faculty
- MiE - optional from other scientific areas.

List of Major Elective courses				
id	code	Course	Weekly fund of hours	ECTS
1	04.2.ICSBM.1304.MaE	e-commerce	3+2	6
2	04.7.ICSBM.1305.MaE	e-marketing	3+2	6
3	04.9.ICSBM.1306.MaE	Management of technologies and innovations	3+2	6
4	15.9.ICSBM.1404.MaE	Accounting Information System	3+2	6
5	04.3.ICSBM.1405.MaE	Financial management	3+2	6
6	11.1.ICSBM.1406.MaE	Numerical methods	3+2	6
7	15.9.ICSBM.1504.MaE	Business Information Systems	3+2	6
8	04.9.ICSBM.1505.MaE	Project management	3+2	6
9	04.9.ICSBM.1506.MaE	Entrepreneurship	3+2	6
10	10.9.ICSBM.1507.MaE	Legal regulation of the information society	3+2	6

11	04.2.ICSBM.1603.MaE	e-banking	3+2	6
12	11.3.ICSBM.1604.MaE	Pattern Recognition	3+2	6
13	11.3.ICSBM.1605.MaE	NoSQL Databases	3+2	6
14	11.3.ICSBM.1606.MaE	Human-Computer Interaction (HCI)	3+2	6
15	11.3.ICSBM.1703.MaE	Multiplatform programming	3+2	6
16	04.9.ICSBM.1704.MaE	Market analysis	3+2	6
17	11.9.ICSBM.1705.MaE	Security and privacy of data	3+2	6
18	04.9.ICSBM.1706.MaE	Research methods for business	3+2	6
19	04.7.ICSBM.1804.MaE	Consumer, market and industry research	3+2	6
20	15.9.ICSBM.1805.MaE	Media and communications	3+2	6
21	04.9.ICSBM.1806.MaE	Innovative e-business management and marketing	3+2	6
22	11.3.ICSBM.1807.MaE	Engineering of data, information and knowledge	3+2	6
23	04.2.ICSBM.2104.MaE	e-business 2	3+2	6
24	11.3.ICSBM.2105.MaE	Large data analysis	3+2	6
25	11.3.ICSBM.2106.MaE	Scripting programming	3+2	6
26	15.9.ICSBM.2204.MaE	Strategic planning of information systems	3+2	6
27	04.9.ICSBM.2205.MaE	Quality management	3+2	6

List of Minor Elective courses				
id	code	Course	Weekly fund of hours	ECTS
1	09.0.F.xx55.MiE	Technical Communication 1	3+2	6
2	09.0.F.xx56.MiE	Technical Communication 2	3+2	6
3	03.0.F.xx11.MiE	Digital Arts	3+2	6
4	15.9.F.xx14.MiE	Digital society	3+2	6
5	13.2.F.xx09.MiE	E-Ethics	3+2	6
6	14.9.F.xx21.MiE	E-Gaming	3+2	6
7	14.9.F.xx22.MiE	E-Governance	3+2	6
8	15.1.F.xx23.MiE	E-Journalism	3+2	6
9	15.9.F.xx25.MiE	E-Media	3+2	6
10	11.9.F.xx26.MiE	e-Platforms	3+2	6
11	07.2.F.xx33.MiE	Ecology	3+2	6
12	15.9.F.xx34.MiE	Electronic elections	3+2	6
13	09.2.F.xx35.MiE	English for Academic Purposes	3+2	6
14	11.9.F.xx40.MiE	Interactive Design	3+2	6
15	04.9.F.xx05.MiE	IT Startups	3+2	6

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16	10.9.F.xx41.MiE	Law and intellectual property	3+2	6
17	09.0.F.xx47.MiE	Macedonian Language	3+2	6
18	04.9.F.xx10.MiE	Management of Human Resources	3+2	6
19	04.7.F.xx27.MiE	Marketing	3+2	6
20	10.6.F.xx29.MiE	Open government	3+2	6
21	04.9.F.xx30.MiE	Product Management	3+2	6
22	09.9.F.xx32.MiE	Public Speaking	3+2	6
23	14.0.F.xx50.MiE	Social networks	3+2	6
24	11.3.F.xx52.MiE	Visual Communication and Graphics Design	3+2	6
25	10.6.F.xx54.MiE	e-Democracy	3+2	6
26	10.6.F.xx57.MiE	e-Diplomacy	3+2	6
27	09.0.F.xx58.MiE	Academic writing	3+2	6
28	10.9.ICSBM.2206.MiE	Intellectual property	3+2	6
29	04.9.ICSBM.2207.MiE	Strategic Management	3+2	6