

FINAL PROGRAM OF STUDY

for the program

«Advanced Information Technologies (3 semesters, 91 ECTS, Master, MSc)»

STRUCTURE OF THE PROGRAM OF STUDY

PROGRAM REQUIREMENTS	ECTS
Compulsory courses	4
Elective courses (a) Courses of specialization	72
Postgraduate Diploma Thesis (Optional*)	15
Practical training	0
Total ECTS	91

* In case students do not choose the Postgraduate Diploma Thesis option, then they have to complete 2 additional Elective Courses of 16 ECTS. In such case the total ECTS for the program is 92.

COURSE DISTRIBUTION PER SEMESTER

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	Number of ECTS
1st Semester								
1.	Elective	Elective Course I, Group A	CS XXX			13		8
2.	Elective	Elective Course II, Group A	CS XXX			13		8
3.	Elective	Elective Course III, Group A or Group B	CS XXX			13		8
4.	Elective	Elective Course IV, Group A or Group B	CS XXX			13		8
2nd Semester								
1.	Compulsory	Research Methodologies and Professional Practices in Computer Science	CS 670	3	3, 0, 0	13	39	4
2.	Elective	Elective Course V, Group A	CS XXX			13		8
3.	Elective	Elective Course VI, Group A	CS XXX			13		8
4.	Elective	Elective Course VII, Group A or Group B	CS XXX			13		8
3rd Semester Option 1								
1.	Elective	Postgraduate Diploma Thesis	CS 750			13		15
2.	Elective	Elective Course VIII, Group A or Group B	CS XXX			13		8

3.	Elective	Elective Course IX, Group A or Group B	CS XXX			13		8
3rd Semester Option 2								
1.	Elective	Elective Course VIII, Group A or Group B	CS XXX			13		8
2.	Elective	Elective Course IX, Group A or Group B	CS XXX			13		8
3.	Elective	Elective Course X, Group A or Group B	CS XXX			13		8
4.	Elective	Elective Course XI, Group A or Group B	CS XXX			13		8

The details of the offered courses (per semester) are shown in the following table:

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration ¹	Number of weeks/ Academic semester	Total hours/ Academic semester	Number of ECTS
FALL Semester								
1.	Elective	Distributed Systems	CS601	6	3, 1, 2	13	78	8
2.	Elective (Group A)	Advanced Software Engineering	CS603	5	3, 0, 2	13	65	8
3.	Elective	Artificial Intelligence	CS604	5	3, 0, 2	13	65	8
4.	Elective (Group A)	Advanced Computer Architecture	CS605	6	3, 1, 2	13	78	8
5.	Elective (Group A)	Computer Networks and the Internet	CS606	6	3, 1, 2	13	78	8
6.	Elective (Group A)	Visual Computing	CS607	5	3, 0, 2	13	65	8
7.	Elective	Programming for Games and Interactive Technologies	CS608	5	3, 0, 2	13	65	8
8.	Elective (Group A)	Advanced Topics in Databases	CS646	5	3, 0, 2	13	65	8
9.	Elective	Computational Logic	CS663	4	3, 1, 0	13	52	8
10.	Elective (Group A)	Temporal Information Systems in Medicine	CS678	4	3, 1, 0	13	52	8

¹ The type of periods of contact with the students are three: Lecture(s), Recitation, Laboratory. For consistency and full information disclosure, the duration (in hours) is given for all three types and zero time is indicated when one of the three types is not applicable.

11.	Elective (Group A)	Electronic Health	CS679	4	3, 1, 0	13	52	8
SPRING Semester								
1.	Elective (Group A)	Computer Games Software Technology	CS653	5	3, 0, 2	13	65	8
2.	Elective (Group A)	Advanced Parallel Processing	CS655	6	3, 1, 2	13	78	8
3.	Elective (Group A)	Computer Graphics - Modelling and Realism	CS656	5	3, 0, 2	13	65	8
4.	Elective	Wireless Networks	CS657	6	3, 1, 2	13	78	8
5.	Elective	Digital Video Processing	CS658	5	3, 0, 2	13	65	8
6.	Elective (Group A)	Design with Embedded Processors	CS659	6	3, 1, 2	13	78	8
7.	Elective	Information Retrieval and Search Engines	CS660	6	3, 1, 2	13	78	8
8.	Elective	Systems Analysis and Verification	CS664	6	3, 1, 2	13	78	8
9.	Elective	Constraint Solving Methods	CS665	4	3, 1, 0	13	52	8
10.	Elective	Neuroinformatics	CS667	6	3, 1, 2	13	78	8
11.	Elective (Group A)	Mechanical Vision	CS668	5	3, 0, 2	13	65	8
12.	Compulsory	Research Methodologies and Professional Practices in Computer Science	CS670	3	3, 0, 0	13	39	4
13.	Elective	Algorithmic Game Theory	CS673	4	3, 1, 0	13	52	8

14.	Elective (Group A)	System and Network Security	CS674	6	3, 1, 2	13	78	8
15.	Elective	Cognitive programming	CS680	4	3, 1, 0	13	52	8
16.	Elective (Group A)	Advanced Topics in Software Reuse	CS681	6	3, 1, 2	13	78	8
17.	Elective (Group A)	Advanced Security Topics	CS682	4	3, 1, 0	13	52	8
18.	Elective	Special Topics in Computer Science	CS699	3	3, 0, 0	13	39	8

LIST OF ELECTIVE COURSES

Four (4) of the elective courses, should be related to the professional scope of the programme (Elective Course Group A), and the others could be either from Elective Course Group A, or Elective Course Group B.

Elective Course Group A

Course Code and Title	ECTS
CS603 – Advanced Software Engineering	8
CS605 – Advanced Computer Architecture	8
CS606 – Computer Networks and the Internet	8
CS607 – Visual Computing	8
CS646 – Advanced Topics in Databases	8
CS653 – Computer Games Software Technology	8
CS655 – Advanced Parallel Processing	8
CS656 – Computer Graphics - Modelling and Realism	8
CS659 – Design with Embedded Processors	8
CS668 – Mechanical Vision	8
CS674 – System and Network Security	8
CS678 – Temporal Information Systems in Medicine	8
CS679 – Electronic Health	8
CS681 – Advanced Topics in Software Reuse	8
CS682 – Advanced Security Topics	8

Elective Course Group B

Course Code and Title	ECTS
CS601 – Distributed Systems	8
CS604 – Artificial Intelligence	8
CS608 – Programming of Games and Interactive Technologies	8
CS657 – Wireless Networks	8
CS658 – Digital Video Processing	8
CS660 – Information Retrieval and Search Engines	8

CS663 – Computational Logic	8
CS664 – Systems Analysis and Verification	8
CS665 – Constraint Solving Methods	8
CS667 – Neuroinformatics	8
CS673 – Algorithmic Game Theory	8
CS680 – Cognitive programming	8
CS699 – Special Topics in Computer Science	8