Transilvania University of Brasov, Romania

Study program: Applied Computer Science

Faculty:	Mathematics and Computer Science
Study period:	3 years (bachelor)
Academic year structure:	Two semesters (14 weeks per semester)
Examination sessions (two):	Winter session (January/February)
	Summer session (May (3rd year)/June)

Courses per year (C= course; S = seminar; L = laboratory; P = project)

1st Year

No. crt.	Course	1st Semester					2nd Semester				
		C	S	L	P	Cred	C	S	L	P	Cred
1.	Mathematical analysis	3	2	0	0	5					
2.	Basic algebra for computer science	2	2	0	0	5					
3.	Fundamental algorithms	2	1	2	0	6					
4.	Fundamentals of programming	2	0	2	0	5					
5.	Mathematical and computational Logic	2	1	0	0	4					
6.	Academic ethics and integrity I	1	0	2	0	2					
7.	English/German/French/Spanish language 1	1	1	0	0	2					
8.	Physical education and sport 1	0	1	0	0	1					
9.	Linear algebra, analytical and differential geometry						2	2	0	0	5
10.	Computer systems architecture						2	1	1	0	5
11.	Object oriented programming						2	0	2	0	6
12.	Data structures						2	0	2	0	6
13.	Operating systems						2	0	2	0	5
14.	English/German/French/Spanish language 2						1	1	0	0	2
15.	Physical education and sport 2						0	1	0	0	1

Note – Please be aware that there are also two **Optional courses** available:

- Fundamental concepts of informatics
- Fundamental concepts of mathematics

Each of these courses is worth 2 credits, and both are offered during the first semester.

2nd Year

No. crt.	Course	3rd Semester					4th Semester				
		C	S	L	P	Cred	C	S	L	P	Cred
1.	Graph algorithms	2	0	2	0	5					
2.	Formal languages and automata theory	2	1	1	0	5					
3.	Programming environments and tools	2	0	2	0	5					
4.	Databases	2	0	2	0	5					
5.	Modern C++ applied in artificial intelligence	2	0	2	0	5					
6.	Cloud-based application development (Optional subject)	2	0	2	0	5					
7.	Artificial intelligence						2	0	2	0	5
8.	Visual programming						2	0	2	0	5
9.	Computer networks						2	0	2	0	5
10.	Probability and mathematical statistics						2	1	1	0	5
11.	Statistical inference in machine learning						2	0	2	0	5
12.	Web and Mobile Application Development with Angular, .Net, and Android (Optional subject)						2	0	2	0	5
13.	Physical education and sport						0	2	0	0	2

3rd Year

No. crt.	Course	5th Semester					6th Semester				
		C	S	L	P	Cred	C	S	L	P	Cred
1.	Verification and validation of software systems	2	0	2	0	5					
2.	Web technologies	2	0	2	0	5					
3.	Mobile application development	2	0	2	0	5					
4.	Professional practice	0	0	0	8	5					
5.	Digital image processing (Optional subject)	2	0	2	0	5					
6.	Neural networks and Deep learning (Optional subject)	2	0	2	0	5					
7.	Computer graphics						2	0	2	0	5
8.	Logical and functional programming						2	0	2	0	5
9.	Practical coordination for bachelor thesis						0	0	0	6	5
10.	Database management systems						2	0	2	0	5
11.	Parallel programming (Optional subject)						2	0	2	0	5
12.	Software testing techniques (Optional subject)						2	0	2	0	5