



Computer Science BSc curriculum – 2021

**Debrecen
2024/2025.**

COMPUTER SCIENCE BSC CURRICULUM

Qualification requirements

General requirements of the diploma are regulated by The Rules and Regulations of The University of Debrecen.

Work and Fire Safety and Physical Education

The courses of „Work and Fire Safety” and „Physical Education” are worth 1 - 1 credit, which must be completed in excess of the number of credits required for the diploma as specified in the training and outcome requirements of the degree.

Diploma credit requirements:

Mathematics and Computer Science:	60 credits
Informatics:	90 credits
Compulsory topics:	54 credits
Differentiated knowledge topics:	36 credits
Professional Training:	12 credits
Thesis work:	20 credits
Free choice:	10 credits
Total:	180 credits
Work and Fire Safety:	1 credit
Physical Education (2 semesters):	2 credits

Mathematics and Computer Science – needed 60 credits

Code	Subject name	Credit	Type and number			Asses- ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBPA0101-21 INBPA0101E INBPA0101G	Logic in computer science	6	2	2		E S		1	1
INBPA0102-17 INBPA0102E INBPA0102G	Discrete mathematics	6	2	2		PM		1	1
INBPA0103-17 INBPA0103E INBPA0103L	Computer aided mathematics and visualization	6	2		2	PM		1	1
INBPA0206-17 INBPA0206E INBPA0206G	Data structures and algorithms	6	2	2		E S	INBPA0101-21 INBPA0102-17	2	2
INBPA0207-21 INBPA0207E INBPA0207G	Calculus	6	2	2		PM		2	2
INBPA0313-17 INBPA0313E INBPA0313L	Applied statistics	6	2		2	E S	INBPA0207-21	1	3

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBPA0314-21 INBPA0314E INBPA0314G	Introduction to computer science	6	2	2		E S	INBPA0102-17	1	3
INBPA0417-21 INBPA0417G INBPA0417L	Applied mathematics	6		2	2	PM	INBPA0102-17	2	4
INBPA0418-21 INBPA0418E INBPA0418L	Foundations of artificial intelligence	6	2		2	E S	INBPA0101-21 INBPA0211-21	2	4
INBPA0419-17 INBPA0419E INBPA0419L	Foundations of computer security	6	2		2	E S	INBPA0211-21	2	4

Informatics (Compulsory topics) – needed 54 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBPA0104-21 NBPA0104L	Introduction to programming	3			2	PM		1	1
INBPA0105-21 INBPA0105E INBPA0105L	Operating systems	6	2		2	E S		1	1
INBPA0208-17 INBPA0208E	Database systems	3	2			E	INBPA0101-21	2	2
INBPA0209-17 INBPA0209L	Database systems lab	3			2	PM	INBPA0101-21	2	2
INBPA0210-17 INBPA0210E INBPA0210L	Network architectures and protocols	6	2		2	E S	INBPA0104-21 INBPA0105-21	2	2
INBPA0211-21 INBPA0211E INBPA0211L	High-level programming languages 1	6	2		2	E S	INBPA0104-21	2	2
INBPA0315-21 INBPA0315G INBPA0315L	High-level programming languages 2	6		2	2	PM	INBPA0211-21	1	3
INBPA0316-17 INBPA0316E INBPA0316L	Web technologies	6	2		2	E S	INBPA0104-21	1	3
INBPA0420-21 INBPA0420E INBPA0420L	Software engineering and technologies	6	2		2	PM	INBPA0315-21	2	4
INBPA0521-17 INBPA0521L	Software development methodologies	3			2	PM	INBPA0211-21	1	5
INBPA0522-21 INBPA0522G INBPA0522L	Web application development	6		2	2	PM	INBPA0315-21 INBPA0316-17	1	5

Thesis work – needed 20 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	gyakorlat					
				tant.	labor				
INBPA0523-21 INBPA0523X	Thesis 1	5				PM		1	5
INBPA0623-21 INBPA0623X	Thesis 2	15				PM		2	6

Informatics (Differentiated knowledge topics) – needed 36 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBPA9924-17 INBPA9924L	3D printing and modeling	3			2	PM	INBPA0103-17	2	2
INBPA9925-17 INBPA9925L	Cloud computing	3			2	PM	INBPA0105-21	2	2
INBPA9926-17 INBPA9926L	Basics of GIS	3			2	PM	INBPA0103-17	2	2
INBPA9944-17 INBPA9944L	Graphics Systems	3			2	PM	INBPA0103-17	2	2
INBPA9927-17 INBPA9927L	Bioinformatics	3			2	PM	INBPA0206-17	1	3
INBPA9928-21 INBPA9928E	E-Sport	3	2			E	INBPA0211-21	1	3
INBPA9929-17 INBPA9929E INBPA9929L	Operation of infocommunication systems	6	2		2	PM	INBPA0210-17	1	3
INBPA9930-17 INBPA9930L	Image processing in practice	3			2	PM	INBPA0211-21	1	3
INBPA9931-17 INBPA9931L	High-level programming languages 3	3			2	PM	INBPA0211-21	1	3
INBPA9942-17 INBPA9942L	Scripting Languages	3			2	PM	INBPA0211-21	1	3
INBPA9932-17 INBPA9932L	Introduction to 3D game development	3			2	PM	INBPA0103-17 INBPA0315-21	2	4
INBPA9933-17 INBPA9933L	Compilers	3			2	PM	INBPA0211-21 INBPA0314-21	2	4
INBPA9934-17 INBPA9934L	Machine learning in practice	3			2	PM	INBPA0211-21 INBPA0313-17	2	4
INBPA9935-17 INBPA9935L	Advanced database knowledge	3			2	PM	INBPA0209-17	2	4
INBPA9936-17 INBPA9936L	NoSQL databases	3			2	PM	INBPA0209-17 INBPA0315-21	2	4
INBPA9943-17 INBPA9943E	Fundamentals of Information and Coding Theory	3	2			E	INBPA313-17	2	4
INBPA9937-17 INBPA9937L	Mobile application development	3			2	PM	INBPA0420-21	1	5
INBPA9938-17 INBPA9938L	Computer Statistics	3			2	PM	INBPA0313-17	1	5

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBPA9939-17 INBPA9939L	Software testing	3			2	PM	INBPA0420-21	1	5
INBPA9940-17 INBPA9940L	Advanced data security	3			2	PM	INBPA0419-17 INBPA0522-21	2	6
INBPA9941-17 INBPA9941L	Advanced web technologies	3			2	PM	INBPA0522-21	2	6
INBPA9949-17 INBPA9949L	Virtual reality and its applications	3			2	PM	INBPA0103-17	1	
INBPA9950-17 INBPA9950L	Ethical hacking I.	3			2	PM	INBPA0211-21	1	
INBPA9951-17 INBPA9951E	Blockchain technology	3	2			E		1	
INBPA9955-17 INBPA9955L	Introduction to reinforcement learning	3			2	PM		1	
INBPA9958-17 INBPA9958L	Introduction to the AWS Cloud	3			2	PM		1	
INBPA9959-21 INBPA9959L	Network and System Security	3			2	PM	INBPA0105-21	1	
INBPA9997-21 INBPA9997G	Professional Training	12				PM	INBPA0315-21 INBPA0208-17 INBPA0209-17	1	6

Free choice – needed 10 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				

Exam types: E exam
S signature
PM practical mark