



**UNIVERSITY OF DEBRECEN**  
**FACULTY OF INFORMATICS**



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# **Computer Science Engineering BSc**

## **curriculum – 2017**

**Debrecen**  
**2017/2018.**

## COMPUTER SCIENCE ENGINEERING BSc CURRICULUM

### Qualification requirements

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

### Diploma credit requirements:

Natural Science:	44 credits
Humane and Economic Knowledge:	15 credits
Compulsory topics	96 credits
Differentiated knowledge topics:	30 credits
Thesis work:	15 credits
Free choice:	10 credits
Work and Fire Safety Training:	0 credit
Physical Education (2 semester):	0 credit
<b>Total:</b>	<b>210 credits</b>

### Natural Science – needed 44 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0101G	Algorithms and Basics of Programming	2		2		PM		1	1
INBMA0102E INBMA0102L	Electronics	6	2		2	PM		1	1
INBMA0103E INBMA0103L	Physics	6	2		2	E S		1	1
INBMA0104E INBMA0104G	Calculus	6	2	2		E S		1	1
INBMA0105E INBMA0105L	Mathematics for Engineers 1	6	2		2	PM		1	1
INBMA0207E INBMA0207G	Data Structures and Algorithms	6	2	2		E S		2	2
INBMA0208E INBMA0208L	Mathematics for Engineers 2	6	2		2	E S	INBMA0104 INBMA0105	2	2
INBMA0313E INBMA0313L	Probability Theory and Mathematical Statistics	6	2		2	PM	INBMA0104 INBMA0105	1	3

### Human and Economic Knowledge – needed 15 credits

Code	Subject name	Credit	Type and number			Assessment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0314E INBMA0314G	Economics	6	2	2		E S		1	3
INBMA0631E	Fundamentals of Business Law	3	2			E		2	6

Code	Subject name	Credit	Type and number			Asses- ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0632E INBMA0632G	Management Basics for Engineers	6	2	2		E S		2	6

### Compulsory topics – needed 96 credits

Code	Subject name	Credit	Type and number			Asses- ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0106E INBMA0106G	Introduction into Logic and Computer Science	4	2	2		E S		1	1
INBMA0209E INBMA0209G	Digital Design	6	2	2		E S	INBMA0102	2	2
INBMA0210L	Digital Design Laboratory	3			2	PM	INBMA0102	2	2
INBMA0211E INBMA0211L	Programming Languages 1	6	2		2	E S	INBMA0101	2	2
INBMA0212E	Computer Architectures	3	2			E		2	2
INBMA0315L	Signals and Systems	3			2	PM	INBMA0102 INBMA0208	1	3
INBMA0316L	Introduction to Graphical Programming Environment	3			2	PM	INBMA0101	1	3
INBMA0317L	Programming Languages 2	6			4	PM	INBMA0101	1	3
INBMA0318E INBMA0318L	Computer Networks	6	2		2	E S	INBMA0212	1	3
INBMA0419E	Management of Data Network Systems	3	2			E	INBMA0318	2	4
INBMA0420L	Operating Systems	3			2	PM		2	4
INBMA0421L	System Programming	3			2	PM	INBMA0211	2	4
INBMA0422E INBMA0422L	Control Systems	6	2		2	PM	INBMA0315	2	4
INBMA0423L	Software Development for Engineers	3			2	PM	INBMA0317	2	4
INBMA0424E	Enterprise Information Systems	3	2			E		2	4
INBMA0425L	Web Solutions	3			2	PM	INBMA0211 OR INBMA0317	2	4
INBMA0526E INBMA0526L	Introduction into Artificial Intelligence	6	2		2	E S	INBMA0106 INBMA0207 INBMA0211	1	5
INBMA0527L	Assembly Programming	3			2	PM	INBMA0211 INBMA0212	1	5
INBMA0528E INBMA0528L	Embedded Systems	6	2		2	E S	INBMA0102 INBMA0212	1	5
INBMA0529G	Modeling and Analysis of Information Technology Systems	2		2		PM	INBMA0313	1	5
INBMA0530L	Mobile Solutions	3			2	PM	INBMA0317	1	5

Code	Subject name	Credit	Type and number			Asses-ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0633E INBMA0633L	Database Systems and Knowledge Representation	6	2		2	PM	INBMA0211	2	6
INBMA0634L	IT Security	3			2	PM	INBMA0420	2	6
INBMA0635L	Computer Graphics	3			2	PM	INBMA0211 OR INBMA0317	2	6

### Thesis work – needed 15 credits

Code	Subject name	Credit	Type and number			Asses-ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA0736X	Thesis	15				PM		1	7

### Differentiated knowledge topics – needed 30 credits

Code	Subject name	Credit	Type and number			Asses-ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				
INBMA9937E INBMA9937L	Microcontrollers	6	2		2	PM	INBMA0209 INBMA0211	2	4
INBMA9938G INBMA9938L	Programming Network Devices 1	6		2	2	PM	INBMA0318	1	5
INBMA9939E INBMA9939L	Programmable Logic Devices	6	2		2	PM	INBMA0209 INBMA0211	1	5
INBMA9940L	Development of Embedded Systems	6			4	PM	INBMA0528 (INBMA9937 OR INBMA9939)	2	6
INBMA9941G INBMA9941L	Programming Network Devices 2	6		2	2	PM	INBMA9938	2	6
INBMA9942E INBMA9942L	Modeling and Performance Evaluation of Networks	6	2		2	PM	INBMA0529	2	6
INBMA9943E INBMA9943L	Telecommunication Systems	6	2		2	PM	INBMA0318	2	6
INBMA9944E INBMA9944L	Sensors and actuators Network	6	2		2	PM	INBMA0318 INBMA9937	1	7

### Free choice – needed 10 credits

Code	Subject name	Credit	Type and number			Asses-ment	Prerequisites	Period	Semester
			lec.	practice					
				sem.	lab				