

Model Curriculum of Electrical Engineering BSc Program – University of Debrecen, Hungary

	semesters							ECTS credit points	evaluation
	1.	2.	3.	4.	5.	6.	7.		
	contact hours, types of teaching (l – lecture, p – practice, lab – laboratory), credit points (cr)								
Fundamentals of Natural Sciences subject group (42 credits)									
1. TTMBE0810 Mathematics 1. TTMBG0810 Mathematics 1. <i>László Kozma, Zoltán Muzsnay</i>	56 l / 4 cr 28 p / 2 cr							4+2=6	exam, mid-semester grade
2. TTMBE0811 Mathematics 2. TTMBG0811 Mathematics 2. <i>László Kozma, Zoltán Muzsnay</i>		56 l / 4 cr 28 p / 2 cr						4+2=6	exam, mid-semester grade
3. TTMBE0812 Mathematics 3. TTMBG0812 Mathematics 3. <i>László Kozma, Ágota Figula</i>			28 l / 3 cr 28 p / 2 cr					3+2=5	exam, mid-semester grade
4. TTFBE1101 Physics 1. TTFBG1101 Physics 1. <i>Sándor Egri</i>	42 l / 4 cr 14 p / 1 cr							4+1=5	exam, mid-semester grade
5. TTFBE1102 Physics 2. TTFBG1102 Physics 2. <i>Sándor Egri</i>		42 l / 4 cr 14 p / 1 cr						4+1=5	exam, mid-semester grade
6. TTFBE1113 Materials Science for Electrical Engineering TTFBG1103 Materials Science for Electrical Engineering <i>Lajos Daróczi, István Csarnovics</i>	28 l / 3 cr 28 p / 2 cr							3+2=5	exam, mid-semester grade
7. TTFBE1104 Informatics 1. TTFBL1104 Informatics 1. <i>Gyula Zilizi, Árpád Rácz</i>	28 l / 4 cr 28 lab / 1 cr							3+2=5	exam, mid-semester grade
8. TTFBE1105 Informatics 2. TTFBL1105 Informatics 2. <i>Gyula Zilizi, Árpád Rácz</i>		28 l / 4 cr 28 lab / 1 cr						3+2=5	exam, mid-semester grade
Economics and Human Knowledge subject group (16 credits)									
9. TTTBE0030-K1 EU Studies <i>Károly Teperics</i>	14 l / 1 cr							1	exam

10. TTBEVVVM-KT1 Introduction to Economics <i>István Kovács</i>			28 1 / 3 cr					3	exam
11. JA-BIOBSc3 Basics of Labour Law <i>György Nádas</i>						28 1 / 3 cr		3	exam
12. TTFBE1112 Intellectual Property Protection <i>László Mátyus, Tamás Bene</i>						28 1, 14 p 3 cr		3	exam
13. TTBEVVVM-KT2 Enterprise Economics <i>András Nábrádai</i>			28 1 / 3 cr					3	exam
14. TTBEVVVM-KT6 Quality Management <i>Ágnes Kotsis</i>							28 1 / 3 cr	3	exam
Advanced Professional Module subject group (92 credits)									
15. TTFBE1201 Programming 1. TTFBL1201 Programming 1. <i>Ferenc Kun</i>	28 1 / 2 cr 28 lab / 2 cr							2+2=4	exam, mid-semester grade
16. TTFBE1202 Programming 2. <i>Ferenc Kun</i>		14 1, 28 lab / 3 cr						3	mid-semester grade
17. TTFBE1203 Introduction to Measurements and Instrumentation <i>Sándor Egri</i>		14 1, 28 lab / 3 cr						3	mid-semester grade
18. TTFBL1213 Introduction to LabVIEW Programming <i>István Szabó</i>			28 lab / 2 cr					2	mid-semester grade
19. TTFBE1204 Measurements and Instrumentation <i>László Oláh</i>				28 1, 28 lab / 5 cr				5	mid-semester grade
20. TTFBE1205 Electricity 1. TTFBG1205 Electricity 1. <i>Réka Trencsényi</i>	28 1 / 2 cr 28 p / 3 cr							2+3=5	exam, mid-semester grade
21. TTFBE1206 Electricity 2. TTFBG1206 Electricity 2. <i>Réka Trencsényi</i>		42 1 / 3 cr 28 p / 3 cr						3+3=6	exam, mid-semester grade

22. TTFBE1207 Electricity 3. TTFBG1217 Electricity 3. <i>Réka Trencsényi</i>			28 1 / 2 cr 14 p / 1 cr					2+1=3	exam, mid-semester grade
23. TTFBE1208 Electronics 1. TTFBG1208 Electronics 1. <i>Gyula Zilizi</i>		28 1 / 3 cr 28 p / 2 cr						3+2=5	exam, mid-semester grade
24. TTFBE1209 Electronics 2. TTFBG1209 Electronics 2. <i>Gyula Zilizi, Lajos Harasztosi</i>			42 1 / 3 cr 28 p / 3 cr					3+3=6	exam, mid-semester grade
25. TTFBL1230 Electronics 3. <i>László Oláh</i>				42 lab / 3 cr				3	mid-semester grade
26. TTFBE1211 Digital Electronics 1. TTFBL1211 Digital Electronics 1. <i>Gyula Zilizi</i>			42 1 / 3 cr 28 lab / 2 cr					3+2=5	exam, mid-semester grade
27. TTFBE1222 Digital Electronics 2. <i>Gyula Zilizi</i>				28 1, 42 lab / 6 cr				6	mid-semester grade
28. TTFBE1223 Electrotechnology <i>Árpád Rác</i>				14 1, 28 lab / 3 cr				3	mid-semester grade
29. TTFBL1227 Basics of Technical Drawing <i>Zsolt Szabó</i>					42 lab / 3 cr			3	mid-semester grade
30. TTFBE1225 Microelectronics <i>Sándor Misák</i>					28 1 / 3 cr			3	exam
31. TTFBE1216 Electric Power Systems TTFBG1216 Electric Power Systems <i>János Kósa, Árpád Rác</i>					28 1 / 3 cr 28 p / 2 cr			3+2=5	exam, mid-semester grade
32. TTFBE1218 Automation and Control Engineering 1. TTFBG1218 Automation and Control Engineering 1. <i>Sándor Misák</i>					28 1 / 3 cr 28 p / 2 cr			3+2=5	exam, mid-semester grade

33.	TTFBE1221 Electronic Technology TTFBL1221 Electronic Technology <i>István Csarnovics</i>					28 l / 3 cr 28 lab / 2 cr		3+2=5	exam, mid-semester grade
34.	TTFBE1219 Automation and Control Engineering 2. TTFBG1219 Automation and Control Engineering 2. <i>Gábor Katona</i>					28 l / 3 cr 28 p / 2 cr		3+2=5	exam, mid-semester grade
35.	TTFBE1214 Telecommunication and infocommunication <i>István Szabó</i>					28 l / 3 cr 14 lab / 1 cr		3+1=4	exam, mid-semester grade
36.	TTFBE1220 Labour Protection and Safety Technology <i>Réka Trencsényi</i>					28 l / 3 cr		3	exam
37.	TTFBG1520 Upgrade Electricity <i>Sándor Egri</i>		28 p / 0 cr					0	mid-semester grade

Selected Specialization subject group (50 credits)

38.	Specialization Subject 1.					42 l, 28 lab / 6 cr		6	exam, mid-semester grade
39.	Specialization Subject 2. (project)					28 l, 56 lab / 7 cr		7	exam, mid-semester grade
40.	Specialization Subject 3.					28 l, 28 lab / 5 cr		5	exam, mid-semester grade
41.	Specialization Subject 4.					42 l / 4 cr		4	exam
42.	Specialization Subject 5.						28 l / 3 cr	3	exam
43.	Individual Laboratory					140 lab / 10 cr		10	mid-semester grade
44.	Diploma Thesis						210 p / 15 cr	15	mid-semester grade
45.	Professional Practice <i>Réka Trencsényi</i>	<i>Mandatory Summer Internship after the 6th semester, at least 6 weeks. The Internship may be performed in parts and at different places. Registration on subject is carried out next semester after obtaining of completion endorsement.</i>							

Free-optional subject group (10 credits)

46. Free-optional Subject 1.						28 l, 14 p / 3 cr	28 l, 14 p / 3 cr	6	exam
47. Free-optional Subject 2.						28 l / 2 cr	28 l / 2 cr	4	exam
48. Sport	28 p / 0 cr	28 p / 0 cr	28 p / 0 cr	28 p / 0 cr				0	

1. Infotechnology specialization subject group

38.	TTFBE1311 Programmable Logic Devices TTFBL1311 Programmable Logic Devices <i>Ádám Kardosi</i>					28 l / 2 cr 28 lab / 3 cr			2+3=5	exam, mid-semester grade
39.	TTFBE1312 Application technics of embedded systems (project) TTFBL1312 Application technics of embedded systems (project) <i>Csaba Cserhádi</i>					14 l / 1 cr 42 lab / 4 cr			1+4=5	exam, mid-semester grade
49.	TTFBE1316 Digital Signal Processing TTFBL1316 Digital Signal Processing <i>István Szabó</i>					14 l / 2 cr 14 lab / 1 cr			2+1=3	exam, mid-semester grade
40.	TTFBE1314 Nanoelectronics and Nanotechnology <i>István Csarnovics</i>						28 l, 14 p / 4 cr		4	exam
41.	TTFBE1315 Photonics TTFBL1315 Photonics <i>István Csarnovics</i>						28 l / 3 cr 28 lab / 2 cr		3+2=5	exam, mid-semester grade
42.	TTFBE1313 Technical image processing <i>Csaba Cserhádi</i>							14 l, 28 lab / 3 cr	3	mid-semester grade
43.	TTFBL1301 Individual Laboratory						140 lab / 10 cr		10	mid-semester grade
44.	TTFBG1302 Diploma Thesis							210 p / 15 cr	15	mid-semester grade

2. Industrial Process Control specialization

38.	TTFBE1321 Industrial Process Control TTFBL1321 Industrial Process Control					42 l / 4 cr 28 lab / 2 cr			4+2=6	exam, mid-semester grade
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39.	TTFBE1322 Smart Sensor and Measure Systems (project) TTFBL1322 Smart Sensor and Measure Systems (project)					28 l / 2 cr 56 lab / 5 cr			2+5=7	exam, mid-semester grade
40.	TTFBE1323 Electrical Switching Gears TTFBG1323 Electrical Switching Gears						28 l / 3 cr 28 p / 1 cr		3+1=4	exam, mid-semester grade
41.	TTFBE1324 Electrical Machines and Drives TTFBL1324 Electrical Machines and Drives						28 l / 3 cr 28 lab / 2 cr		3+2=5	exam, mid-semester grade
42.	TTFBE1325 Power Electronics							28 l / 3 cr	3	exam
43.	TTFBL1301 Individual Laboratory						140 lab / 10 cr		10	mid-semester grade
44.	TTFBG1302 Diploma Thesis							210 p / 15 cr	15	mid-semester grade

3. Electric Power Systems specialization

38.	TTFBE1331 Electricity grid and operations TTFBG1331 Electricity grid and operations					42 l, 28 lab / 6 cr			6	exam, mid-semester grade
39.	TTFBE1332 IoT solutions for Electrical Power Systems (project) TTFBL1332 IoT solutions for Electrical Power Systems (project)					28 l, 56 lab / 7 cr			7	exam, mid-semester grade

40.	TTFBE1323 Electrical Switching Gears TTFBG1323 Electrical Switching Gears						28 l / 3 cr 28 p / 1 cr		3+1=4	exam, mid-semester grade
41.	TTFBE1324 Electrical Machines and Drives TTFBL1324 Electrical Machines and Drives						28 l / 3 cr 28 lab / 2 cr		3+2=5	exam, mid-semester grade
42.	TTFBE1335 Renewable Energy Systems							28 l / 3 cr	3	exam
43.	TTFBL1301 Individual Laboratory						140 lab / 10 cr		10	mid-semester grade
44.	TTFBG1302 Diploma Thesis							210 p / 15 cr	15	mid-semester grade