Óbuda University
Kandó Kálmán Faculty of Electrical Engineering

Electrical Engineering BSc English language training

Valid:
from 2023/2024 school year

Full time training

Curriculum "F"

with weekly hours: lectures (lc), practices (pr), laboratory (lb); with requirements (re); with credits (cr)

Nr	Subject code	Subject name	C.	Weekly hours	Credit	Semesters																																		Prerequisites				
						1.					2.					3.					4.					5.					6.					7.									
						lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	Nr	Subject code	C.	Nr	Subject code	C.
	Natural science knowledge total:			36	44	4	11	1		19	3	4			9	4	6			12	1	2			4																				
1.	KMXIA1EBNF	Informatics		3	4	1	2	0	a	4																																			
2.	KEXKM1EBNF	Creative solutions in the electrical engineering profession		3	4	0	3	0	a	4																																			
3.	KTXTT1EBNF	Basics of natural science		3	3	0	3	0	a	3																																			
4.	KEEVR1EBNF	Materials science for engineers	(3)	2	3	1	0	1	e	3																																			
5.	KTXMA1EBNF	Mathematics I.		4	4	2	2	0	e	4																																			
6.	KTXMA2EBNF	Mathematics II.		3	4						1	2	0	e	4																										5.	KTXMA1EBNF	(1)		
7.	KTXMA3EBNF	Mathematics III.		3	4											1	2	0	e	4																					6.	KTXMA2EBNF	(1)		
8.	OTTPH1EBNF	Physical training I.		1	1	0	1	0	t	1																																			
9.	OTTPH2EBNF	Physical training II.		1	1						0	1	0	t	1																										8.	OTTPH1EBNF			
10.	OTTPH3EBNF	Physical training III.		1	1											0	1	0	t	1																					9.	OTTPH2EBNF			
11.	OTTPH4EBNF	Physical training IV.		1	1																0	1	0	t	1																10.	OTTPH3EBNF			
12.	KTXFI1EBNF	Physics I.		3	4						2	1	0	e	4																										3.	KTXTT1EBNF		5.	KTXMA1EBNF
13.	KTXFI2EBNF	Physics II.		3	4											2	1	0	e	4																					12.	KTXFI1EBNF			
14.	KHXIK1EBNF	Basics of infocommunication		3	3											1	2	0	a	3																					5.	KTXMA1EBNF			
15.	KEEBT1EBNF	Environmental, quality and safety technology	(3)	2	3																1	1	0	e	3																				
	Economic and humanities knowledge total:			10	16	1	2			4		1			3		2			3						2				3	2				3										
16.	KPXIT1EBNF	Innovative learning technology skills in becoming an engineer		3	4	1	2	0	a	4																																			
17.	KPXTK1EBNF	Building a tutor system		1	3						0	1	0	a	3																														
18.	KPXTA1EBNF	Application of a tutor system		2	3											0	2	0	a	3																					17.	KPXTK1EBNF			
19.	KMEGA1EBNF	Basic knowledge of economics	(3)	2	3																					2	0	0	a	3															
20.	KMEVA1EBNF	Basic knowledge of business	(3)	2	3																										2	0	0	a	3						19.	KMEGA1EBNF			
	Electrical engineering professional knowledge total:			62	81	2	2	1		5	7	4	4		20	4	2	6		16	6	2	10		24	2		4		8	2	4			8										
21.	KHXVT1EBNF	Electricity I.		5	5	2	2	1	e	5																																			
22.	KHXVT2EBNF	Electricity II.		4	4						2	2	0	e	4																										21.	KHXVT1EBNF	(1)		
23.	KAXDT1EBNF	Digital technics I.		2	4						2	0	0	e	4																														
24.	KAXDT2EBNF	Digital technics II.		3	4											1	0	2	e	4																					23.	KAXDT1EBNF			
25.	KEXEL1EBNF	Electronics I.		3	4						1	0	2	e	4																										21.	KHXVT1EBNF			
26.	KEXEL2EBNF	Electronics II.		3	4											1	0	2	e	4																					25.	KEXEL1EBNF			
27.	KMXMT1EBNF	Measurements I.		3	4						1	0	2	a	4																										21.	KHXVT1EBNF	(1)		
28.	KMXMT2EBNF	Measurements II.		3	4											1	0	2	a	4																					27.	KMXMT1EBNF			
29.	KMEPR1EBNF	Programming I.	(3)	3	4						1	2	0	a	4																										1.	KMXIA1EBNF			
30.	KMXPR2EBNF	Programming II.		3	4											1	2	0	a	4																					29.	KMEPR1EBNF			
31.	KEXKV1EBNF	Complex exam I.		0	0											0	0	0	e	0																					6.	KTXMA2EBNF		22.	KHXVT2EBNF
32.	KEXKV2EBNF	Complex exam II.		0	0																0	0	0	e	0																31.	KEXKV1EBNF			
33.	KIXBR1EBNF	Embedded systems		3	4																1	2	0	a	4																24.	KAXDT2EBNF		26.	KEXEL2EBNF
34.	KAXIT1EBNF	Control engineering		3	4																1	0	2	e	4																6.	KTXMA2EBNF			
35.	KVXME1EBNF	Renewable energy sources and energy efficiency		3	4																					1	0	2	a	4															
36.	KAXPV1EBNF	Basic knowledge of programmed control technology		3	4																1	0	2	a	4																24.	KAXDT2EBNF			
37.	KHXTT1EBNF	Telecommunication technologies		3	4																1	0	2	a	4																14.	KHXIK1EBNF	#		
38.	KVXVE1EBNF	Electrical energetics		3	4																1	0	2	e	4																6.	KTXMA2EBNF		22.	KHXVT2EBNF
39.	KEXET1EBNF	Electronics technology		3	4																1	0	2	a	4																4.	KEEVR1EBNF			
40.	KAXVH1EBNF	Electrical drive chains		3	4																					1	0	2	a	4											34.	KAXIT1EBNF			
41.	KVXEM1EBNF	EMC		3	4																										1	2	0	e	4										
42.	KHXWT1EBNF	Internet applications and WEB technologies		3	4																										1	2	0	a	4						30.	KMXPR2EBNF			

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Nr	Subject code	Subject name	C.	Weekly hours	Credit	Semesters																																		Prerequisites				
						1.					2.					3.					4.					5.					6.					7.									
						lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	Nr	Subject code	C.	Nr	Subject code	C.
	Subjects of optional specialisation total:			34	44																					4		8		18	4		8		16	4		6		10	32.	KEXKV2EBNF				
	Automation specialisation		(5)	34	44																					4		8		18	4		8		16	4		6		10						
43.	KAXEP1EBNF	Building and public utility automation		5	7																					2	0	3	e	7											36.	KAXPV1EBNF				
44.	KAXPI1EBNF	Programmable control systems		5	7																					2	0	3	e	7											24.	KAXDT2EBNF				
45.	KAXHT1EBNF	Drive and power electronic systems		5	7																										2	0	3	e	7						40.	KAXVH1EBNF				
46.	KAPPM1EBNF	Project I.		2	4																					0	0	2	a	4																
47.	KAPPM2EBNF	Project II.		2	4																										0	0	2	a	4						46.	KAPPM1EBNF				
48.		Obligatory optional professional subject 1	(4)	5	5																										2	0	3	e	5											
49.		Obligatory optional professional subject 2	(4)	5	5																															2	0	3	e	5						
50.		Obligatory optional professional subject 3	(4)	5	5																															2	0	3	e	5						
	Communication technologies specialisation		(5)	34	44																					4		8		18	4		8		16	4		6		10						
51.	KHXHE1EBNF	Communication theory		5	7																					2	0	3	e	7											37.	KHXTT1EBNF	#			
52.	KHXIH1EBNF	Infocommunication networks		5	7																					2	0	3	e	7											37.	KHXTT1EBNF				
53.	KHXDJ1EBNF	Digital signal processing		5	7																										2	0	3	e	7						37.	KHXTT1EBNF				
54.	KHPPM1EBNF	Project I.		2	4																					0	0	2	a	4																
55.	KHPPM2EBNF	Project II.		2	4																										0	0	2	a	4						54.	KHPPM1EBNF				
56.		Obligatory optional professional subject 1	(4)	5	5																										2	0	3	e	5											
57.		Obligatory optional professional subject 2	(4)	5	5																															2	0	3	e	5						
58.		Obligatory optional professional subject 3	(4)	5	5																															2	0	3	e	5						
	Embedded systems specialisation		(5)	34	44																					4		8		18	4		8		16	4		6		10						
59.	KMXJK1EBNF	Signal and image processing		5	7																					2	0	3	e	7											28.	KMXMT2EBNF				
60.	KMXSA1EBNF	Computer architectures		5	7																					2	0	3	e	7											33.	KIXBR1EBNF				
61.	KEXEB1EBNF	Sensors, actuators and communication		5	7																										2	0	3	e	7						60.	KMXSA1EBNF				
62.	KIPPM1EBNF	Project I.		2	4																					0	0	2	a	4																
63.	KIPPM2EBNF	Project II.		2	4																										0	0	2	a	4						62.	KIPPM1EBNF				
64.		Obligatory optional professional subject 1	(4)	5	5																										2	0	3	e	5											
65.		Obligatory optional professional subject 2	(4)	5	5																															2	0	3	e	5						
66.		Obligatory optional professional subject 3	(4)	5	5																															2	0	3	e	5						
	Energy specialisation		(5)	36	44																					6	4	9		25	2		5		9	4		6		10						
67.	*KVXEG1EBNF*	Energy management		5	7																					2	0	3	e	7											38.	KVXVE1EBNF				
68.	*KVXVL1EBNF*	Electrical power transmission and distribution		6	7																					2	2	2	a	7																
69.	*KVXVA1EBNF*	Electrical protection and automation		6	7																					2	2	2	a	7																
70.	*KVPPM1EBNF*	Project I.		2	4																					0	0	2	a	4																
71.	*KVPPM2EBNF*	Project II.		2	4																										0	0	2	a	4						70.	KVPPM1EBNF				
72.		Obligatory optional professional subject 1	(4)	5	5																										2	0	3	e	5											
73.		Obligatory optional professional subject 2	(4)	5	5																															2	0	3	e	5						
74.		Obligatory optional professional subject 3	(4)	5	5																															2	0	3	e	5						

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Nr	Subject code	Subject name	C.	Weekly hours	Credit	Semesters 1. lc	1. pr	1. lb	1. re	1. cr	2. lc	2. pr	2. lb	2. re	2. cr	3. lc	3. pr	3. lb	3. re	3. cr	4. lc	4. pr	4. lb	4. re	4. cr	5. lc	5. pr	5. lb	5. re	5. cr	6. lc	6. pr	6. lb	6. re	6. cr	7. lc	7. pr	7. lb	7. re	7. cr	Prerequisites Nr	Subject code	C.	Nr	Subject code	C.
	Free optional subjects total:			**6**	**10**																					**2**				**3**	**2**				**3**	**2**				**4**						
75.		Free optional subject 1	(4)	2	3																					2	0	0	a	3																
76.		Free optional subject 2	(4)	2	3																										2	0	0	a	3											
77.		Free optional subject 3	(4)	2	4																															2	0	0	a	4						
	Thesis subjects total:			**3**	**15**																																	**3**		**15**						
78.	KADSD1EBNF KHDSD1EBNF KIDSD1EBNF KVDSD1EBNF	Thesis		3	15																															0	0	3	a	15	47. 55. 63. 71.	KAPPM2EBNF KHPPM2EBNF KIPPM2EBNF KVPPM2EBNF				
		Total:		**151**	**210**	**7**	**15**	**2**		**28**	**10**	**9**	**4**		**32**	**8**	**10**	**6**		**31**	**7**	**4**	**10**		**28**	**10**	**0**	**12**		**32**	**10**	**4**	**8**		**30**	**6**	**0**	**9**		**29**						
		Weekly hours total:				24					23					24					21					22					22					15										
		Number of Examinations (e):							3					5					5					4					2					3					2						
		Number of Assignments (a):							4					3					4					4					5					4					2						
		Number of Three-stage grades (t):							1					1					1					1					0					0					0						

The training total hours:	**2 114 h**	
Lectures from this:	**812 h**	***38,41%***
practices, laboratory:	**1 302 h**	***61,59%***

Nr	Subject code	Subject name	C.	Weekly hours	Credit	Semesters 1. lc	1. pr	1. lb	1. re	1. cr	2. lc	2. pr	2. lb	2. re	2. cr	3. lc	3. pr	3. lb	3. re	3. cr	4. lc	4. pr	4. lb	4. re	4. cr	5. lc	5. pr	5. lb	5. re	5. cr	6. lc	6. pr	6. lb	6. re	6. cr	7. lc	7. pr	7. lb	7. re	7. cr	Prerequisites Nr	Subject code	C.	Nr	Subject code	C.
	Criterion requirement subjects		**(6)**																																											
79.	KEIPT1EBNF	Patronage		1	0	0	1	0		0																																				

Comment(s):
Courses signed by character # can be started paralelly, if necessary.
(1) Sign of course makes necessary to fulfill prerequisites.
(2) The semester of the placement of the given subject is determined by the institution depending on the number of students.
(3) The subject is taught in an e-learning or blended learning system, and the detailed half-year requirement of the subject is the guide.
(4) List of obligatory optional professional subjects and free optional subjects are included on the next table.
(5) All subjects of the chosen subject group are required fulfilled.
(6) The criterion requirement is a mandatory requirement in the curriculum that does not have a credit point. (TVSZ. 35. § (4))

The condition for admission to the final exam - in addition to obtaining the above credit value - is the completion of an obligatory external internship during the training, the minimum total time of which is: 6 weeks

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Nr	Subject code	Subject name	C.	Weekly hours		Credit	Semesters																																		Prerequisites				
							1.					2.					3.					4.					5.					6.					7.									
							lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	Nr	Subject code	C.	Nr	Subject code	C.
	Obligatory optional professional subjects 1																																												
	Obligatory optional professional subjects 2-3																																												
	Recommended free optional subjects 1		**(9)**																																										
	Recommended free optional subjects 2		**(9)**																																										
80.	**KAVOK1EBNF**	**Operational technology cyber security**		**2**	**3**																										**2**	**0**	**0**	**a**	**3**										
	Recommended free optional subjects 3		**(9)**																																										

Comment(s): **(9) In addition to the items listed here, additional optional subjects can be found in the Neptun system.**

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Nr	Subject code	Subject name	C.	Week-ly hours	Credit	Semesters																										
						5.					6.					7.					8.					9.						
						lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr	lc	pr	lb	re	cr
	Cooperative education total:			18	100					5	3				15	3				20	6				30	6				30
	KAOSG1EBNF KHOSG1EBNF KMOSG1EBNF KVOSG1EBNF	Practice in profession I.	(11)	0	5				a	5																				
	KAOSG2EBNF KHOSG2EBNF KMOSG2EBNF KVOSG2EBNF	Practice in profession II.	(11)	0	10									a	10															
	KAOSG3EBNF KHOSG3EBNF KMOSG3EBNF KVOSG3EBNF	Practice in profession III.	(11)	0	15														a	15										
	KAOSG4EBNF KHOSG4EBNF KMOSG4EBNF KVOSG4EBNF	Practice in profession IV.	(11)	0	20																			a	20					
	KAOSG5EBNF KHOSG5EBNF KMOSG5EBNF KVOSG5EBNF	Practice in profession V.	(11)	0	20																								a	20
		Optional professional subject I.		3	5						3	0	0	e	5															
		Optional professional subject II.		3	5											3	0	0	e	5										
		Optional professional subject III.		3	5																3	0	0	e	5					
		Optional professional subject IV.		3	5																3	0	0	e	5					
		Optional professional subject V.		3	5																					3	0	0	e	5
		Optional professional subject VI.		3	5																					3	0	0	e	5

Comment(s): (11) Weekly hours of practice in profession is given by the cooperative contract.

Conditions of Cooperative Education at Electrical Engineering BSc English language training:

1. Students have to fulfill minimum 120 credits before starting Cooperative Education.

2. Courses of Cooperative Education are fixed by Council of the Faculty year by year.

3. Based on the decision of the Faculty, students can participate in 1-5 semesters of Cooperative Education during their studies.

Final Exam subjects:

Combined from the compulsory subjects of the chosen specialisation.