

Study plan

Name of study plan: Otevřené elektronické systémy - Integrované elektronické systémy

Faculty/Institute/Others:

Department:

Branch of study guaranteed by the department: Welcome page

Garantor of the study branch:

Program of study: Welcome page

Type of study: unknown full-time

Required credits: 74

Elective courses credits: 46

Sum of credits in the plan: 120

Note on the plan:

Name of the block: Compulsory courses in the program

Minimal number of credits of the block: 25

The role of the block: P

Code of the group: MDIP

Name of the group: Diploma Thesis

Requirement credits in the group: In this group you have to gain at least 25 credits (at most 400)

Requirement courses in the group: In this group you have to complete at least 1 course

Credits in the group: 25

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
A0M13DIP	Diploma Thesis	Z	25	36S	L	P
A0M14DIP	Diploma Project	Z	25		L	P
A0M15DIP	Master's thesis	Z	25	36s	L	P
A0M16DIP	Diploma thesis	Z	25	36s	L,Z	P
A0M17DIP	Diploma Thesis	Z	25	36s	L	P
A0M31DIP	Diploma Thesis	Z	25		L	P
A0M33DIP	Diploma Thesis	Z	25	36S	L	P
A0M34DIP	Diploma Thesis	Z	25	36C	L	P
A0M35DIP	Diploma Thesis	Z	25	36S	L	P
A0M37DIP	Diploma Thesis	Z	25	36s	L	P
A0M38DIP	Diploma Thesis	Z	25	0P+36C	L	P
A0M39DIP	Master Thesis	Z	25		L	P
A0M36DIP	Diploma Thesis	Z	25	14s	L,Z	P
ADIP25	Diploma Thesis	Z	25	36s	L	P

Characteristics of the courses of this group of Study Plan: Code=MDIP Name=Diploma Thesis

A0M13DIP	Diploma Thesis	Z	25	Independent final comprehensive work for the Master's degree study program. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.		
A0M14DIP	Diploma Project	Z	25			
A0M15DIP	Master's thesis	Z	25			
A0M16DIP	Diploma thesis	Z	25			
A0M17DIP	Diploma Thesis	Z	25	Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination. Diploma projects deals with microwave technique, antennas, propagation, optical communications, EMC, and medical applications.		
A0M31DIP	Diploma Thesis	Z	25			
A0M33DIP	Diploma Thesis	Z	25			

A0M34DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M35DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M37DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M38DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M39DIP	Master Thesis	Z	25
A0M36DIP	Diploma Thesis	Z	25
ADIP25	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			

Name of the block: Compulsory courses of the specialization

Minimal number of credits of the block: 45

The role of the block: PO

Code of the group: MOESPO3

Name of the group: Compulsory subjects of the branch

Requirement credits in the group: In this group you have to gain 45 credits

Requirement courses in the group: In this group you have to complete at least 9 courses

Credits in the group: 45

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
A8M31AAS	Advanced Analog Systems	Z,ZK	5	2P+2S	Z	PO
A8M34MST	Microsystems Michal Kočí, Miroslav Husák, Alexandr Laposa, Adam Bouřa Miroslav Husák Miroslav Husák (Gar.)	Z,ZK	5	2P+2L	L	PO
A8M38MS	Modern Sensors	Z,ZK	5	2P+2L	Z	PO
A8M34NAN	Nanoelectronics and Nanotechnology Jan Voves Jan Voves Jan Voves (Gar.)	Z,ZK	5	2P+2C	L	PO
A8M34ICD	IC Design Jiří Jakovenko, Jan Novák Jiří Jakovenko Jiří Jakovenko (Gar.)	Z,ZK	5	2P+2C	L	PO
A8M34OEP	Planar integrated optics Vítězslav Jeřábek, Václav Prajzler Václav Prajzler Václav Prajzler (Gar.)	Z,ZK	5	2P+2L	Z	PO
A8M36ACA	Advanced Computer Architectures	Z,ZK	5	2P+2L	Z	PO
A8M34ICS	IC Structures Jiří Jakovenko, Vladimír Janiček Jiří Jakovenko Jiří Jakovenko (Gar.)	Z,ZK	5	2P+2C	Z	PO
A8M38ASP	Analog Signal Processing and Digitalization Michal Janošek, Jan Holub Michal Janošek Michal Janošek (Gar.)	Z,ZK	5	2P+2L	Z	PO

Characteristics of the courses of this group of Study Plan: Code=MOESPO3 Name=Compulsory subjects of the branch

A8M31AAS	Advanced Analog Systems	Z,ZK	5
A8M34MST	Microsystems	Z,ZK	5
A8M38MS	Modern Sensors	Z,ZK	5
Overview of basic and advanced knowledge of sensors and extension by knowledge needed for design and development of sensor systems. The content reflects perspective principles of sensors as well as methods of complex sensor signal conditioning and processing. Sensors and sensor systems are shown in specific applications, the design procedures are shown in case studies. Labs in the first part are focused on complex characterization of sensor parameters, in the second part on independent design using FEM modeling and experimental verification.			
A8M34NAN	Nanoelectronics and Nanotechnology	Z,ZK	5
A8M34ICD	IC Design	Z,ZK	5
A8M34OEP	Planar integrated optics	Z,ZK	5
The subject describes theoretical and technological principles and design of planar integrated optics and optoelectronics as optical dividers. The students get acquainted with the principles of the light propagation in planar waveguide and with basic devices and structures of integrated optics and optoelectronics as coupling elements, optical microresonators, planar optical transmitters and receivers with SS-LD, WG-PD. In the course are integrated devices and structures for telecommunication for multiplexing and signal processing. There are optical elements for physical and chemical sensor application and basic important measurement and diagnostic methods.			
A8M36ACA	Advanced Computer Architectures	Z,ZK	5
A8M34ICS	IC Structures	Z,ZK	5
Student learn main design methodologies of analog, digital and optoelectronic integrated systems; Detailed description of the technological process for the IC production; CMOS technologies and its advanced sub-micron trends; IC chip topology, layout and design rules; Technology of micro-electro-mechanical systems MEMS.			

A8M38ASP	Analog Signal Processing and Digitalization	Z,ZK	5
The course is dedicated to methods for preprocessing, digitalization and reconstruction of continuous signals. It is focused to the methods for achieving of high precision of transmission and suppression of spurious components. The laboratory exercises are divided into two parts: the first part is classical tasks; the second one is individual project of design of typically data acquisition system. The teaching is supported by the CAD system for measuring circuits.			

Name of the block: Elective courses
Minimal number of credits of the block: 4
The role of the block: V

Code of the group: MOESH
Name of the group: Humanities subjects
Requirement credits in the group: In this group you have to gain at least 4 credits (at most 20)
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 4
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
B0M16FI2	Philosophy 2	Z,ZK	4	2P+2S	L	v
B0M16HT2	History of science and technology 2	Z,ZK	4	2P+2S	L	v
B0M16HSD	History of economy and social studies	Z,ZK	4	2P+2S	L	v
B0M16MPS	Psychology	Z,ZK	4	2P+2S	Z,L	v
B0M16TE1	Theology	Z,ZK	4	2P+2S	L	v

Characteristics of the courses of this group of Study Plan: Code=MOESH Name=Humanities subjects

B0M16FI2	Philosophy 2	Z,ZK	4	The course is oriented on the transdisciplinary aspects of philosophy, informatics, physics, mathematics and biology.		
B0M16HT2	History of science and technology 2	Z,ZK	4	This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the history and traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical engineers		
B0M16HSD	History of economy and social studies	Z,ZK	4	This subject deals with the history of the European and Czech society in the 19th - 21th centuries. It follows the forming of the European and Czech political representation, its aims and achieved results as well as the social, economical, technical and cultural development and coexistence of the various ethnical groups.		
B0M16MPS	Psychology	Z,ZK	4			
B0M16TE1	Theology	Z,ZK	4	This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic disciplines are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christianity - religion from which grows our civilization up.		

Code of the group: MJK
Name of the group: Language courses
Requirement credits in the group:
Requirement courses in the group:
Credits in the group: 0
Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
A0B04GA	Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	Z,L	v
A0B04KA	English Conversation 2 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	Z,L	v
A0B04OA	Technical English Course Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	Z,L	v
AE0B04C0	Czech Language 0 Markéta Havlíčková Petra Juna Jennings (Gar.)	Z	2	2C	*	v
A0B04CIN	Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	*	v
A0B04KF1	French conversation 1 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	*	v
A0B04KF2	French conversation 1 Petra Juna Jennings Petra Juna Jennings (Gar.)	Z	2	2C	*	v

A0B04F1	French language 1 <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04F2	French language 2 <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04F3	French Language 3 <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04JAP	Japanese <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04GN	German Grammar <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04KN	German Conversation <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04KN2	German conversation 2 <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04N1	German language 1 <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04N2	German language 2 <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04N3	German language 3 <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04ON	Professional German <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04CAE1	Certificate of Advanced English CAE 1 <i>Petra Juna Jennings</i>	Z	2	2C	Z,L	v
A0B04CAE2	Certificate of Advanced English CAE 2 <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04CAE3	Certificate of Advanced English CAE 3 <i>Petra Juna Jennings Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04CAE4	Certificate of Advanced English 4 <i>Pavla Péterová</i>	Z		2C	Z,L	v
A0B04FCE1	FCE 1 <i>Petra Juna Jennings</i>	Z	2	2C	*	v
A0B04FCE2	FCE 2 <i>Petra Juna Jennings</i>	Z	2	2C	*	v
A0B04FCE4	FCE4	Z	2	2C	Z,L	v
A0B04FCE3	FCE 3 <i>Petra Juna Jennings</i>	Z	2	2C	Z,L	v
A0B04PZP	Preparation for stay in Germany <i>Petra Juna Jennings Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04RET	Rhetoric <i>Jitka Pinková Petra Juna Jennings (Gar.)</i>	Z	2	2C	Z,L	v
A0B04KR	Russian conversation	Z	2	2C	Z,L	v
A0B04KR2	Russian conversation 2	Z	2	2C	*	v
A0B04R1	Russian language 1 <i>Jitka Pinková Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04R2	Russian language 2 <i>Jitka Pinková Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04R3	Russian language 3 <i>Jitka Pinková Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04R4	Russian language 3 <i>Jitka Pinková Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04KS1	Spanish conversation 1 <i>Alice Lukešová Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04KS2	Spanish conversation 2 <i>Alice Lukešová Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04S1	Spanish language 1 <i>Alice Lukešová Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04S2	Spanish language 2 <i>Alice Lukešová Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04S3	Spanish language 3 <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04S4	Spanish Language 4 <i>Dana Lisá Petra Juna Jennings (Gar.)</i>	Z	2	2C	*	v
A0B04CA	Technical English for Pre-Intermediate	Z	2	2C	L	v

Characteristics of the courses of this group of Study Plan: Code=MJK Name=Language courses

A0B04GA		Z	2
The aim of this course is to extend and complement grammatical patterns covered in other English courses that are intended for full-time students. The course is meant mainly as a supplement for students who have not yet passed the B2 examination and are interested in further study and additional practice.			
A0B04KA	English Conversation 2	Z	2
The course is designed for students who want to develop their communication skills. Students will be given the opportunity to use the vocabulary they already know, as well as learn new words and phrases, to communicate on a variety of topics and themes. This course is not designed for beginners.			

A0B04OA	Technical English Course	Z	2
This course is designed for students who have successfully passed the B2 Exam or have met the exam requirement. Its main objective is to prepare students to be able to communicate about technical subject matter in English in a variety of formats. This will be practiced by examining the structure and style of writing in formal English and practicing via 3 different types of texts: an abstract, a short explanatory article, and a research article.			
AE0B04C0	Czech Language 0	Z	2
The course is aimed towards ERASMUS students - especially beginners. The course is taught on the basis of English language support. The goal of the course is to give the students first hand information about pronunciation, vocabulary and grammar structure of the Czech language, and also provide them with basic useful phrases needed for everyday communication during their stay in the Czech Republic.			
A0B04CIN		Z	2
A0B04KF1	French conversation 1	Z	2
A0B04KF2	French conversation 1	Z	2
A0B04F1	French language 1	Z	2
A0B04F2	French language 2	Z	2
A0B04F3	French Language 3	Z	2
A0B04JAP	Japanese	Z	2
A0B04GN	German Grammar	Z	2
A0B04KN	German Conversation	Z	2
A0B04KN2	German conversation 2	Z	2
A0B04N1	German language 1	Z	2
A0B04N2	German language 2	Z	2
A0B04N3	German language 3	Z	2
A0B04ON	Professional German	Z	2
A0B04CAE1	Certificate of Advanced English CAE 1	Z	2
The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE1 covers units 1-4. Studying for CAE helps you to improve your language skills (reading, writing, English in use, listening and speaking) and use them in a wide range of contexts. The exam is based on realistic tasks and indicates the ability to use the language in practical situations. You will be able to participate in meetings and discussions, expressing opinions clearly and be able to understand and produce texts of various types. CAE is recognised by the majority of universities in English speaking countries as proof of adequate language skills for courses taught and assessed in English as well as by employers who require knowledge of a foreign language. CAE is taken by more than 60 000 people each year in more than 60 countries. It is possible but not necessary for obtaining credit to take CAE at British Council.			
A0B04CAE2	Certificate of Advanced English CAE 2	Z	2
The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE2 covers units 5-8. Studying for CAE helps you to improve your language skills (reading, writing, English in use, listening and speaking) and use them in a wide range of contexts. The exam is based on realistic tasks and indicates the ability to use the language in practical situations. You will be able to participate in meetings and discussions, expressing opinions clearly and be able to understand and produce texts of various types. CAE is recognised by the majority of universities in English speaking countries as proof of adequate language skills for courses taught and assessed in English as well as by employers who require knowledge of a foreign language. CAE is taken by more than 60 000 people each year in more than 60 countries. It is possible but not necessary for obtaining credit to take CAE at British Council. Student is allowed to enrol only into one CAE course during one semester.			
A0B04CAE3	Certificate of Advanced English CAE 3	Z	2
The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE3 covers unit 9 - 12. Studying for CAE helps you to improve your language skills (reading, writing English in use, listening and speaking) and use them in a wide range of contexts.			
A0B04CAE4	Certificate of Advanced English 4	Z	
A0B04FCE1	FCE 1	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04FCE2	FCE 2	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04FCE4	FCE4	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04FCE3	FCE 3	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the Common European Framework of Reference for Languages (CEFR). The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 CEFR.			
A0B04PZP	Preparation for stay in Germany	Z	2
A0B04RET	Rhetoric	Z	2
The objective of the subject is to master and improve skills necessary for successful presentation as well as enhancing the communicative ability of the prospective engineers and bachelors. This subject will enable the students to develop both spoken and written presentations, non verbal communication and remove the psychological barriers for public speaking so that the students can create a good image. The course "Retorika" provides an introduction to this subject.			
A0B04KR	Russian conversation	Z	2
A0B04KR2	Russian conversation 2	Z	2
A0B04R1	Russian language 1	Z	2
A0B04R2	Russian language 2	Z	2
A0B04R3	Russian language 3	Z	2
A0B04R4	Russian language 3	Z	2
A0B04KS1	Spanish conversation 1	Z	2
A0B04KS2	Spanish conversation 2	Z	2
A0B04S1	Spanish language 1	Z	2

A0B04S2	Spanish language 2	Z	2
A0B04S3	Spanish language 3	Z	2
A0B04S4	Spanish Language 4	Z	2
A0B04CA	Technical English for Pre-Intermediate	Z	2

Code of the group: MTV

Name of the group: Physical education

Requirement credits in the group:

Requirement courses in the group:

Credits in the group: 0

Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
TVV	Physical education	Z	0	0+2	Z,L	v
TV-V1	Physical education	Z	1	0+2	Z,L	v
TVV0	Physical education	Z	0	0+2	Z,L	v
TVKZV	Physical Education Course	Z	0	7dní	Z	v
TVKLV	Physical Education Course	Z	0	7dní	L	v

Characteristics of the courses of this group of Study Plan: Code=MTV Name=Physical education

TVV	Physical education	Z	0
TV-V1	Physical education	Z	1
TVV0	Physical education	Z	0
TVKZV	Physical Education Course	Z	0
TVKLV	Physical Education Course	Z	0

Code of the group: MOESVOL

Name of the group: Elective subjects

Requirement credits in the group:

Requirement courses in the group:

Credits in the group: 0

Note on the group:

~Nabídku volitelných předmětů uspořádaných podle kateder najdete na webových stránkách
<http://www.fel.cvut.cz/cz/education/volitelne-predmety.html>

List of courses of this pass:

Code	Name of the course	Completion	Credits
A0B04CA	Technical English for Pre-Intermediate	Z	2
A0B04CAE1	Certificate of Advanced English CAE 1 The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE1 covers units 1-4. Studying for CAE helps you to improve your language skills (reading, writing, English in use, listening and speaking) and use them in a wide range of contexts. The exam is based on realistic tasks and indicates the ability to use the language in practical situations. You will be able to participate in meetings and discussions, expressing opinions clearly and be able to understand and produce texts of various types. CAE is recognised by the majority of universities in English speaking countries as proof of adequate language skills for courses taught and assessed in English as well as by employers who require knowledge of a foreign language. CAE is taken by more than 60 000 people each year in more than 60 countries. It is possible but not necessary for obtaining credit to take CAE at British Council.	Z	2
A0B04CAE2	Certificate of Advanced English CAE 2 The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE2 covers units 5-8. Studying for CAE helps you to improve your language skills (reading, writing, English in use, listening and speaking) and use them in a wide range of contexts. The exam is based on realistic tasks and indicates the ability to use the language in practical situations. You will be able to participate in meetings and discussions, expressing opinions clearly and be able to understand and produce texts of various types. CAE is recognised by the majority of universities in English speaking countries as proof of adequate language skills for courses taught and assessed in English as well as by employers who require knowledge of a foreign language. CAE is taken by more than 60 000 people each year in more than 60 countries. It is possible but not necessary for obtaining credit to take CAE at British Council. Student is allowed to enrol only into one CAE course during one semester.	Z	2
A0B04CAE3	Certificate of Advanced English CAE 3 The aim of the course is to prepare for Certificate of Advanced English - the second highest level Cambridge ESOL exam. The course CAE3 covers unit 9 - 12. Studying for CAE helps you to improve your language skills (reading, writing English in use, listening and speaking) and use them in a wide range of contexts.	Z	2
A0B04CAE4	Certificate of Advanced English 4	Z	

A0B04CIN		Z	2
A0B04F1	French language 1	Z	2
A0B04F2	French language 2	Z	2
A0B04F3	French Language 3	Z	2
A0B04FCE1	FCE 1	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04FCE2	FCE 2	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04FCE3	FCE 3	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the Common European Framework of Reference for Languages (CEFR). The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 CEFR.			
A0B04FCE4	FCE4	Z	2
The course is aimed for students, employees of the Faculty and the public whose knowledge of English corresponds to B1 level according to the European Language Frame. The course focuses on improving all language skills - writing, speaking, reading, listening, grammar and phonetics - and is submitted to the goal of obtaining the required skills needed for B2 ELF.			
A0B04GA		Z	2
The aim of this course is to extend and complement grammatical patterns covered in other English courses that are intended for full-time students. The course is meant mainly as a supplement for students who have not yet passed the B2 examination and are interested in further study and additional practice.			
A0B04GN	German Grammar	Z	2
A0B04JAP	Japanese	Z	2
A0B04KA	English Conversation 2	Z	2
The course is designed for students who want to develop their communication skills. Students will be given the opportunity to use the vocabulary they already know, as well as learn new words and phrases, to communicate on a variety of topics and themes. This course is not designed for beginners.			
A0B04KF1	French conversation 1	Z	2
A0B04KF2	French conversation 1	Z	2
A0B04KN	German Conversation	Z	2
A0B04KN2	German conversation 2	Z	2
A0B04KR	Russian conversation	Z	2
A0B04KR2	Russian conversation 2	Z	2
A0B04KS1	Spanish conversation 1	Z	2
A0B04KS2	Spanish conversation 2	Z	2
A0B04N1	German language 1	Z	2
A0B04N2	German language 2	Z	2
A0B04N3	German language 3	Z	2
A0B04OA	Technical English Course	Z	2
This course is designed for students who have successfully passed the B2 Exam or have met the exam requirement. Its main objective is to prepare students to be able to communicate about technical subject matter in English in a variety of formats. This will be practiced by examining the structure and style of writing in formal English and practicing via 3 different types of texts: an abstract, a short explanatory article, and a research article.			
A0B04ON	Professional German	Z	2
A0B04PZP	Preparation for stay in Germany	Z	2
A0B04R1	Russian language 1	Z	2
A0B04R2	Russian language 2	Z	2
A0B04R3	Russian language 3	Z	2
A0B04R4	Russian language 3	Z	2
A0B04RET	Rhetoric	Z	2
The objective of the subject is to master and improve skills necessary for successful presentation as well as enhancing the communicative ability of the prospective engineers and bachelors. This subject will enable the students to develop both spoken and written presentations, non verbal communication and remove the psychological barriers for public speaking so that the students can create a good image. The course "Retorika" provides an introduction to this subject.			
A0B04S1	Spanish language 1	Z	2
A0B04S2	Spanish language 2	Z	2
A0B04S3	Spanish language 3	Z	2
A0B04S4	Spanish Language 4	Z	2
A0M13DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study program. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M14DIP	Diploma Project	Z	25
A0M15DIP	Master's thesis	Z	25
A0M16DIP	Diploma thesis	Z	25
A0M17DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination. Diploma projects deals with microwave technique, antennas, propagation, optical communications, EMC, and medical applications.			

A0M31DIP	Diploma Thesis	Z	25
A0M33DIP	Diploma Thesis	Z	25
A0M34DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M35DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M36DIP	Diploma Thesis	Z	25
A0M37DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M38DIP	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
A0M39DIP	Master Thesis	Z	25
A8M31AAS	Advanced Analog Systems	Z,ZK	5
A8M34ICD	IC Design	Z,ZK	5
A8M34ICS	IC Structures	Z,ZK	5
Student learn main design methodologies of analog, digital and optoelectronic integrated systems; Detailed description of the technological process for the IC production; CMOS technologies and its advanced sub-micron trends; IC chip topology, layout and design rules; Technology of micro-electro-mechanical systems MEMS.			
A8M34MST	Microsystems	Z,ZK	5
A8M34NAN	Nanoelectronics and Nanotechnology	Z,ZK	5
A8M34OEP	Planar integrated optics	Z,ZK	5
he subject describes theoretical and technological principles and design of planar integrated optics and optoelectronics as optical dividers, The students get acquainted with the principles of the light propagation in planar waveguide and with basic devices and structures of integrated optics and optoelectronics as coupling elements, optical microresonators, planar optical transmitters an receivers with SS-LD, WG-PD . In the course are integrated devices and structures for telecommunication for multiplexing and signal processing. There are optical elements for physical and chemical sensor application and basic important measurement and diagnostic methods.			
A8M36ACA	Advanced Computer Architectures	Z,ZK	5
A8M38ASP	Analog Signal Processing and Digitalization	Z,ZK	5
The course is dedicated to methods for preprocessing, digitalization and reconstruction of continuous signals. It is focused to the methods for achieving of high precision of transmission and suppression of spurious components. The laboratory exercises are divided into two parts: the first part is classical tasks; the second one is individual project of design of typically data acquisition system. The teaching is supported by the CAD system for measuring circuits.			
A8M38MS	Modern Sensors	Z,ZK	5
Overview of basic and advanced knowledge of sensors and extension by knowledge needed for design and development of sensor systems. The content reflects perspective principles of sensors as well as methods of complex sensor signal conditioning and processing. Sensors and sensor systems are shown in specific applications, the design procedures are shown in case studies. Labs in the first part are focused on complex characterization of sensor parameters, in the second part on independent design using FEM modeling and experimental verification.			
ADIP25	Diploma Thesis	Z	25
Independent final comprehensive work for the Master's degree study programme. A student will choose a topic from a range of topics related to his or her branch of study, which will be specified by branch department or branch departments. The diploma thesis will be defended in front of the board of examiners for the comprehensive final examination.			
AE0B04C0	Czech Language 0	Z	2
The course is aimed towards ERASMUS students - especially beginners. The course is taught on the basis of English language support. The goal of the course is to give the students first hand information about pronunciation, vocabulary and grammar structure of the Czech language, and also provide them with basic useful phrases needed for everyday communication during their stay in the Czech Republic.			
B0M16FI2	Philosophy 2	Z,ZK	4
The course is oriented on the transdisciplinary aspects of philosophy, informatics, physics, mathematics and biology.			
B0M16HSD	History of economy and social studies	Z,ZK	4
This subject deals with the history of the European and Czech society in the 19th - 21th centuries. It follows the forming of the European and Czech political representation, its aims and achieved results as well as the social, economical, technical and cultural development and coexistence of the various ethnical groups.			
B0M16HT2	History of science and technology 2	Z,ZK	4
This subject traces historical developments in electrical engineering branches in the world and in the Czech Lands. Its ultimate goal is to stimulate students' interest in the history and traditions of the subject, while highlighting the developments in technical education and professional organizations, the process of shaping scientific life and the influence of technical engineers			
B0M16MPS	Psychology	Z,ZK	4
B0M16TE1	Theology	Z,ZK	4
This subject provides to students the basic orientation in christian theology and requires no special previous education. After short philosophic lecture the basic theologic disciplines are gone through. The subject is determined not only to believer students who want to know the reliable theologic grounding but also above all to ones who want to get know Christianity - religion from which grows our civilization up.			
TV-V1	Physical education	Z	1
TVKLV	Physical Education Course	Z	0
TVKZV	Physical Education Course	Z	0
TVV	Physical education	Z	0
TVV0	Physical education	Z	0

For updated information see <http://bilakniha.cvut.cz/en/FF.html>

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