# Study plan

## Name of study plan: Open Electronic Systems

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: 173
Elective courses credits: 7
Sum of credits in the plan: 180
Note on the plan:

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Name of the block: Compulsory courses in the program
Minimal number of credits of the block: 82
The role of the block: P

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Code of the group: BOESEBAP
Name of the group: Bachelor Thesis
Requirement credits in the group: In this group you have to gain at least 9 credits (at most 144)
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 9
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 |
|---|---|---|---|---|---|---|
| AE8B16BAP | **Bachelor project** | Z | 9 | 7s | Z,L | P |
| AE8B14BAP | **Bachelor Project** | Z | 9 | 7s | L | P |
| AE8B13BAP | **Bachelor Project** | Z | 9 | 7S | L | P |
| AE8B33BAP | **Bachelor Project** | Z | 9 | 7S | L | P |
| AE8B39BAP | **Bachelor Project** | Z | 9 | 7S | L | P |
| AE8B17BAP | **Bachelor Project** | Z | 9 | 7s | L | P |
| AE8B31BAP | **Bachelor Project** | Z | 9 | 7ZP | L | P |
| AE8B34BAP | **Bachelor Project** | Z | 9 | 7C | L | P |
| AE8B35BAP | **Bachelor Project** | Z | 9 | 7S | L | P |
| AE8B36BAP | **Bachelor Project** | Z | 9 | 7s | L | P |
| AE8B37BAP | **Bachelor Project** | Z | 9 | 7s | L | P |
| AE8B38BAP | **Bachelor Project** | Z | 9 | 0P+7C | L | P |
| AE8B15BAP | **Bachelor's thesis** | Z | 9 | 7s | L | P |
| ABAP9 | **Bachelor thesis** | Z | 9 | 28s | L | P |

**Characteristics of the courses of this group of Study Plan: Code=BOESEBAP Name=Bachelor Thesis**

| | | | |
|---|---|---|---|
| AE8B16BAP | Bachelor project | Z | 9 |
| AE8B14BAP | Bachelor Project | Z | 9 |
| AE8B13BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B33BAP | Bachelor Project | Z | 9 |
| AE8B39BAP | Bachelor Project | Z | 9 |
| AE8B17BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. Bachelor, s projects are oriented into microwave technique, antennas, propagation, optoelectronics, EMC, medical applications. | | | |

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|---|---|---|---|
| AE8B31BAP | Bachelor Project | Z | 9 |
| The subject Bachelor Project is an independent final project for the Bachelor's degree study programme. A student will choose a topic from a range of topics related to his or her field of study, which will be specified by branch department or branch departments. The Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B34BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B35BAP | Bachelor Project | Z | 9 |
| AE8B36BAP | Bachelor Project | Z | 9 |
| AE8B37BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B38BAP | Bachelor Project | Z | 9 |
| AE8B15BAP | Bachelor's thesis | Z | 9 |
| ABAP9 | Bachelor thesis | Z | 9 |

Code of the group: BOESEP
Name of the group: Compulsory subjects of the programme
Requirement credits in the group: In this group you have to gain 73 credits
Requirement courses in the group: In this group you have to complete at least 12 courses
Credits in the group: 73
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 |
|---|---|---|---|---|---|---|
| AE8B14ADP | **Algorithm Development and Programming** | Z,ZK | 5 | 2+2c | Z | P |
| AE8B01OGT | **Optimization and Game Theory** | Z,ZK | 4 | 3+1s | L | P |

**Characteristics of the courses of this group of Study Plan: Code=BOESEP Name=Compulsory subjects of the programme**

| | | | |
|---|---|---|---|
| AE8B14ADP | Algorithm Development and Programming | Z,ZK | 5 |
| Course objective: Introduction to algorithm design of basic and more advanced computer tasks, Digital computer structure, Introduction to the C programming language, Syntax and semantics. Basic skills of procedural programming paradigm, variable, data type, declaration, operators, expressions, statements, functions, parameter passing, arrays, pointers, structures, compilation and debugging methods, preprocessor, conditional compilation, standard libraries, specific of embedded computer systems programming and debugging. | | | |
| AE8B01OGT | Optimization and Game Theory | Z,ZK | 4 |

Code of the group: BOESEBBE
Name of the group: Safety of the bachelor's studies
Requirement credits in the group:
Requirement courses in the group: In this group you have to complete at least 2 courses
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 |
|---|---|---|---|---|---|---|
| BEEZZ | **Basic health and occupational safety regulations** *Radek Havlíček, Vladimír Kůla, Ivana Nová **Radek Havlíček** Vladimír Kůla (Gar.)* | Z | 0 | 2BP+2BC | Z | P |
| BEEZB | **Safety in Electrical Engineering for a bachelor´s degree** *Radek Havlíček, Vladimír Kůla, Ivana Nová **Radek Havlíček** Vladimír Kůla (Gar.)* | Z | 0 | 2BP+2BC | Z,L | P |

**Characteristics of the courses of this group of Study Plan: Code=BOESEBBE Name=Safety of the bachelor's studies**

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|---|---|---|---|
| BEEZZ | Basic health and occupational safety regulations | Z | 0 |
| The guidelines were worked out based on The Training Scheme for Health and Occupational Safety designed for employees and students of the Czech Technical University in Prague, which was provided by the Rector´s Office of the CTU. Safety is considered one of the basic duties of all employees and students. The knowledge of Health and Occupational Safety regulations forms an integral and permanent part of qualification requirements. This program is obligatory. | | | |
| BEEZB | Safety in Electrical Engineering for a bachelor´s degree | Z | 0 |
| The purpose of the safety course is to give the students basic knowledge of electrical equipment and installation as to avoid danger arising from operation of it. This introductory course contains fundamentals of Safety Electrical Engineering. In this way the students receive qualification of instructed person that enables them to work on electrical equipment. | | | |

Name of the block: Compulsory courses of the specialization
Minimal number of credits of the block: 91
The role of the block: PO

Code of the group: BOESEPO
Name of the group: Compulsory subjects of the branch
Requirement credits in the group: In this group you have to gain 91 credits
Requirement courses in the group: In this group you have to complete at least 18 courses
Credits in the group: 91
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 |
|---|---|---|---|---|---|---|
| AE8B31AAC | **Analog and Acitve Circuits** | Z,ZK | 6 | 3P+2S | Z | PO |
| AE8B31CIR | **Circuit Theory** | Z,ZK | 8 | 4P+2S | L | PO |
| AE8B32DNT | **Data Networks Theory** | Z,ZK | 5 | 3P + 1L | Z | PO |
| AE8B37DCM | **Digital Communications** | Z,ZK | 5 | 4P+0C | Z | PO |
| AE8B37DIT | **Digital Design** | Z,ZK | 5 | 2P+2C | L | PO |
| AE8B32DSP | **Digital Signal Processing** | Z,ZK | 5 | 3P + 1L | Z | PO |
| AE8B32DCL | **Digital Signal Processing and Communication Laboratory** | Z | 2 | 0P + 2C | Z | PO |
| AE8B17ELD | **Electrodynamics** | Z,ZK | 5 | 3P+1S | L | PO |
| AE8B17EMT | **Electromagnetic Field Theory** | Z,ZK | 8 | 4P+2S | Z | PO |
| AE8B34EOD | **Electronic and Optoelectronic Devices** | Z,ZK | 6 | 3P+2L | Z | PO |
| AE8B38EME | **Electronic Measurements** | KZ | 4 | 2P+1L | L | PO |
| AE8B31ELE | **Elements of Electronics** | KZ | 4 | 2P | L | PO |
| AE8B35FCS | **Feed-Back Control Systems** | Z,ZK | 6 | 4P+2L | L | PO |
| AE8B32IES | **Introduction to Electronic Systems** | Z | 2 | 0P + 2L | Z | PO |
| AE8B37SAS | **Signals and Systems** | Z,ZK | 8 | 4P+2C | L | PO |
| AE8B34SST | **Solid State Physics** | Z,ZK | 4 | 3P+1L | L | PO |
| AE8B37SSP | **Statistical Signal Processing** | Z,ZK | 6 | 4P+0C | L | PO |

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

| | | | |
|---|---|---|---|
| AE8B31AAC | Analog and Acitve Circuits | Z,ZK | 6 |

The subject AE8B31AAC is oriented on presentation, matematical description, analysis and sythesis of basic analogue active circuits and function blocks of electronic systems based on basic semiconductor electronic components operating in linear and non-linear modes.

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|---|---|---|---|
| AE8B31CIR | Circuit Theory | Z,ZK | 8 |

The subject AE8B31CIR is a complet systematic presentation of electrical circuit theory. It is based on general physical nature of electromagnetic effects, an electric circuit is presented as a special quasistationary case of electromagnetic field. It defines basic circuit quantities (voltage, current) and basic circuit elements modeling all kinds of actual energy interactions. The subject is specifically oriented on linear electrical circuit (analogue LTI systems), it presents basic priciples and theorems of circuit theory, and analysis methods of linear circuits working in steady and transient states (modes), respectively. The time domain and frequency domain analysis is strictly differentiated. "System? characterization is applied on circuit transfer properties analysis, stability analysis, and feedback theory. At the end the subject deals with basis of discrete LTI systems theory.

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| AE8B32DNT | Data Networks Theory | Z,ZK | 5 |
| AE8B37DCM | Digital Communications | Z,ZK | 5 |

The course provides fundamentals of digital communications theory: modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses.

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| AE8B37DIT | Digital Design | Z,ZK | 5 |

The goal of this course is to introduce the philosophy of digital circuits' design, to provide formal description of combinational and sequential logical circuits, their functional blocks. Both mathematical and functional description, as well as minimization algorithms for output and transient functions of digital components and circuits is presented. Karnaugh maps, latch elements, finite-state Mealy and Moore machines are the essential part of the content. The subject matter discussed will be tested on the typical design of digital circuits.

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| AE8B32DSP | Digital Signal Processing | Z,ZK | 5 |

This subject is focused upon basics in the digital signal processing, systems and methods for digital signal processing.

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| AE8B32DCL | Digital Signal Processing and Communication Laboratory | Z | 2 |

This is a shared practical laboratory jointly practicing theoretical foundations gained in Digital Signal Processing (B-DSP), Digital Communications (B-DCM) and Data Network Theory (B-DNT) courses. It demonstrates how these areas together allow designing a complex functional system. During the course, students will design a set of building blocks based on individual pieces of knowledge from the all above stated courses allowing at the end to build complex demonstration signal processing and communication systems. The laboratory uses a computer based simulation system platform (e.g. Matlab) to practically verify the system functionality and its performance. It also demonstrates how various CAD and mathematical SW tools can be used in designing the system.

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| AE8B17ELD | Electrodynamics | Z,ZK | 5 |

The course AEB17ELD (electrodynamics) is a follow up of the course AEB17EMTA (Electromagnetic field theory). The course starts with a decomposition of electromagnetic field into planewaves, introduces radiation of waves and guides student through the interaction of electromagnetic waves with material boundaries. The theory of wave guides and transmission lines is also shown. The course ends with wave scattering. The knowledge gained in this course is needed for number of specialized master courses.

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| AE8B17EMT | Electromagnetic Field Theory | Z,ZK | 8 |

Students get acquainted with physics fundaments of the electromagnetic theory and with its mathematical description. Particularly, the course guides student through electrostatics, magnetostatics, introduces coupling between time varying fields and it is ends with an introduction to an electromagnetic wave. The knowledge gained in this course are needed for the subsequent course AE8B17ELD (Electrodynamics), for the course of circuit theory, theory of semiconductors and a number of specialized master courses.

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|---|---|---|---|
| AE8B34EOD | Electronic and Optoelectronic Devices | Z,ZK | 6 |
| This course introduces the basic theory, principles of operation and properties of electronic and optoelectronic devices. Physical principles of operation, device structures and characteristics are explained together with adequate models for small- and large-signal. Basic applications in analogue and digital electronics are examined. In seminars and labs, students are introduced to basic principles of device simulation, measurement of device characteristics and extraction of device parameters. Operation of electron devices in electronic systems is then analyzed using the PSpice simulator. | | | |
| AE8B38EME | Electronic Measurements | KZ | 4 |
| The course is focused to metrology fundamentals and uncertainty apparatus. It explains both elementary principles and selected advanced methods used in electronics, telecommunications and radio communications. | | | |
| AE8B31ELE | Elements of Electronics | KZ | 4 |
| The subject AE8B31ELE (B-ELE) is a free continuation of the subject AE8B32IES (B-IES), now with technical contents yet, that provides elementary basis of electrical and electronic engineering, describes and explains common contexts among electrical phenomena, that are important for subsequent specialized subjects (for instance AE8B31CIR (B-CIR), AE8B31DIT (B-DIT), AE8B31EMT (B-EMT), AE8B31SAS (B-SAS).). The subject education uses relatively simple, elementary mathematical and physical methods adequate to the 2nd semester of the bachelor study stage. The subject provides basis of: - electromagnetic field and electrical circuit theory - semiconductor components theory - signal and system theory - digital and microprocessor technique. | | | |
| AE8B35FCS | Feed-Back Control Systems | Z,ZK | 6 |
| Foundation course of automatic control. Introduction to basic concepts and properties of dynamic systems of physical, engineering, biological, economics, robotics and informatics nature. Basic principles of feedback and its use as a tool for altering the behavior of systems and managing uncertainty. Classical and modern methods for analysis and design of automatic control systems. Students specialized in systems and control will build on these ideas and knowledge in the advanced courses to follow. Students of other branches and programs will find out that control is a inspiring, ubiquitous and entertaining field worth of a future cooperation. | | | |
| AE8B32IES | Introduction to Electronic Systems | Z | 2 |
| This is a motivation subject with syllabus composed of a set of demonstrations and measurements. Its content is divided into several themes. Students have a choice from this offer based on their pre-knowledge. The goal is to complete the missing knowledge and skills which may vary in students comming from various schools. The next goal is to get an idea about the scope of the OES programme. | | | |
| AE8B37SAS | Signals and Systems | Z,ZK | 8 |
| Continuous and discrete time signal representation in time and frequency domain. Stochastic signals and their parameters. Elementary principles of analog modulations with their noise conditions. Fundamental course for further study focusing on communication, measurement and signal processing. | | | |
| AE8B34SST | Solid State Physics | Z,ZK | 4 |
| The subject is aimed on solid state physics including some parts of statistical physics. The subject informs about basic properties of materials used in electronics, esp. about semiconductors. | | | |
| AE8B37SSP | Statistical Signal Processing | Z,ZK | 6 |
| The course provides fundamentals in three main domains of the statistical signal processing: 1) estimation theory, 2) detection theory, 3) optimal and adaptive filtering. The statistical signal processing is a core theory with many applications ranging from digital communications, audio and video processing, radar and radio navigation, measurement and experiment evaluation, etc. | | | |

Name of the block: Elective courses
Minimal number of credits of the block: 0
The role of the block: V

Code of the group: BEJK
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 |
| A0B04C2Z | **Czech language 2** ***Jitka Pinková*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z | v |
| A0B04C2L | **Czech language 2** ***Jitka Pinková*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | L | 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** ***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04F2 | **French language 2** ***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04F3 | **French Language 3** ***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04JAP | **Japanese** ***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |

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|---|---|---|---|---|---|---|
| A0B04GN | **German Grammar**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04KN | **German Conversation**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04N1 | **German language 1**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04N2 | **German language 2**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04N3 | **German language 3**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04ON | **Professional German**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04CAE1 | **Certificate of Advanced English CAE 1**<br>***Petra Juna Jennings*** *Pavla Péterová (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04CAE2 | **Certificate of Advanced English CAE 2**<br>***Pavla Péterová*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04CAE3 | **Certificate of Advanced English CAE 3**<br>*Petra Juna Jennings, Pavla Péterová* ***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | Z,L | v |
| A0B04FCE1 | **FCE 1**<br>***Petra Juna Jennings*** | Z | 2 | 2C | * | v |
| A0B04FCE2 | **FCE 2**<br>***Petra Juna Jennings*** | Z | 2 | 2C | * | v |
| A0B04FCE4 | **FCE4** | Z | 2 | 2C | Z,L | v |
| A0B04FCE3 | **FCE 3**<br>***Petra Juna Jennings*** | Z | 2 | 2C | Z,L | v |
| A0B04PZP | **Preparation for stay in Germany**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04RET | **Rhetoric**<br>***Jitka Pinková*** *Petra Juna Jennings (Gar.)* | 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**<br>***Jitka Pinková*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04R2 | **Russian language 2**<br>***Jitka Pinková*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04R3 | **Russian language 3**<br>***Jitka Pinková*** | Z | 2 | 2C | * | v |
| A0B04R4 | **Russian language 3** | Z | 2 | 2C | * | v |
| A0B04KS1 | **Spanish conversation 1**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04KS2 | **Spanish conversation 2**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04S1 | **Spanish language 1**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04S2 | **Spanish language 2**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04S3 | **Spanish language 3**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | Z | 2 | 2C | * | v |
| A0B04S4 | **Spanish Language 4**<br>***Petra Juna Jennings*** *Petra Juna Jennings (Gar.)* | 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=BEJK 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. | | | |
| A0B04C2Z | Czech language 2 | Z | 2 |
| The course is aimed at foreign students studying in Czech, it further develops their language knowledge and skills to meet the needs of technical university students | | | |
| A0B04C2L | Czech language 2 | Z | 2 |
| The course is aimed at foreign students studying in Czech, it further develops their language knowledge and skills to meet the needs of technical university students. | | | |
| 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 |
| 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. | | | |
| 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: BETVK
Name of the group: Physical 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 |
|---|---|---|---|---|---|---|
| A0B03TVKL | **Physical Education Course** | Z | 1 | 7dní | L | v |
| A0B03TVKZ | **Physical Education Course** | Z | 1 | 7dní | Z | v |

**Characteristics of the courses of this group of Study Plan: Code=BETVK Name=Physical Courses**

| | | | |
|---|---|---|---|
| A0B03TVKL | Physical Education Course | Z | 1 |

In the bachelor stage of study the student has to undergo one of P.E. courses (winter or summer course). These courses are aimed at improving exercise skills. The summer course - games course - focuses on improving the knowledge and skills on multigame level - courses of hiking, cycling, canoeing and combined courses - special courses - swimming, windsurfing

| | | | |
|---|---|---|---|
| A0B03TVKZ | Physical Education Course | Z | 1 |

In the bachelor stage of study the student has to undergo one of P.E. courses (winter or summer course). These courses are aimed at improving exercise skills. The winter course - cross-country skiing, downhill skiing, snowboarding training.

Code of the group: BETV
Name of the group: Phisical Training
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 |
|---|---|---|---|---|---|---|
| 03TV | **Physical Education** | Z | 1 | 2s | Z,L | v |
| A0B03TV3 | **Physical Education 3** | Z | 1 | 2s | Z | v |
| A0B03TV4 | **Physical Education 4** | Z | 1 | 2s | L | v |
| A0B03TV5 | **Physical Education 5** | Z | 1 | 2s | Z | v |
| A0B03TV6 | **Physical Education 6** | Z | 1 | 2s | L | v |

**Characteristics of the courses of this group of Study Plan: Code=BETV Name=Phisical Training**

| | | | |
|---|---|---|---|
| 03TV | Physical Education | Z | 1 |

The student can be enlisted in the subject P.E. 03TV (7 times at maximum), the student gets one (1) credit (max. 7 credits during the whole study at F.E.E.) after finishing the optional P.E. subject. The syllabi of each sport disciplin can be found on the Internet address: http://www.Feld.cvut.cz/fee/K303

| | | | |
|---|---|---|---|
| A0B03TV3 | Physical Education 3 | Z | 1 |

The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity.

| | | | |
|---|---|---|---|
| A0B03TV4 | Physical Education 4 | Z | 1 |

The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity.

| | | | |
|---|---|---|---|
| A0B03TV5 | Physical Education 5 | Z | 1 |

The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity.

| | | | |
|---|---|---|---|
| A0B03TV6 | Physical Education 6 | Z | 1 |

The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity.

## List of courses of this pass:

| Code | Name of the course | Completion | Credits |
|---|---|---|---|
| 03TV | Physical Education | Z | 1 |
| The student can be enlisted in the subject P.E. 03TV (7 times at maximum), the student gets one (1) credit (max. 7 credits during the whole study at F.E.E.) after finishing the optional P.E. subject. The syllabi of each sport disciplin can be found on the Internet address: http://www.Feld.cvut.cz/fee/K303 | | | |
| A0B03TV3 | Physical Education 3 | Z | 1 |
| The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity. | | | |
| A0B03TV4 | Physical Education 4 | Z | 1 |
| The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity. | | | |
| A0B03TV5 | Physical Education 5 | Z | 1 |
| The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity. | | | |
| A0B03TV6 | Physical Education 6 | Z | 1 |
| The main goal of the physical training is to improve and extend locomotive skills which students have been earned within previous stages of their education as well as gain basic knowledge connected with kinantropology, hygienics and physiotherapy. Special attention is paid on the healthy lifestyle forming and compensation of sedentary occupation of students as a part of combat with civilization diseases. Within different study programmes, the Department of Physical Education and Sport offers following disciplines: aerobics, aikido, basketball, beach volleyball, badminton, bowling, skating, budo, floorball, football, frisbee, golf, in-line skating, canoeing, karate, fitness, downhill skiing, ice hockey, climbing, shooting bow, ninjutsu, swimming, softball, spinning, squash, table tennis, tennis, hiking, volleyball and health physical education. Students may choose one of above described sport disciplines according to their own interest and available capacity. | | | |
| A0B03TVKL | Physical Education Course | Z | 1 |
| In the bachelor stage of study the student has to undergo one of P.E. courses (winter or summer course). These courses are aimed at improving exercise skills. The summer course - games course - focuses on improving the knowledge and skills on multigame level - courses of hiking, cycling, canoeing and combined courses - special courses - swimming, windsurfing | | | |
| A0B03TVKZ | Physical Education Course | Z | 1 |
| In the bachelor stage of study the student has to undergo one of P.E. courses (winter or summer course). These courses are aimed at improving exercise skills. The winter course - cross-country skiing, downhill skiing, snowboarding training. | | | |
| A0B04C2L | Czech language 2 | Z | 2 |
| The course is aimed at foreign students studying in Czech, it further develops their language knowledge and skills to meet the needs of technical university students. | | | |
| A0B04C2Z | Czech language 2 | Z | 2 |
| The course is aimed at foreign students studying in Czech, it further develops their language knowledge and skills to meet the needs of technical university students | | | |
| A0B04CA | Technical English for Pre-Intermediate | 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. | | | |
| A0B04CIN | | Z | 2 |
| A0B04F1 | French language 1 | Z | 2 |
| A0B04F2 | French language 2 | Z | 2 |
| A0B04F3 | French Language 3 | Z | 2 |

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|---|---|---|---|
| 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 |
| 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 |
| ABAP9 | Bachelor thesis | Z | 9 |
| AE8B01OGT | Optimization and Game Theory | Z,ZK | 4 |
| AE8B13BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B14ADP | Algorithm Development and Programming | Z,ZK | 5 |
| Course objective: Introduction to algorithm design of basic and more advanced computer tasks, Digital computer structure, Introduction to the C programming language, Syntax and semantics. Basic skills of procedural programming paradigm, variable, data type, declaration, operators, expressions, statements, functions, parameter passing, arrays, pointers, structures, compilation and debugging methods, preprocessor, conditional compilation, standard libraries, specific of embedded computer systems programming and debugging. | | | |
| AE8B14BAP | Bachelor Project | Z | 9 |
| AE8B15BAP | Bachelor's thesis | Z | 9 |
| AE8B16BAP | Bachelor project | Z | 9 |
| AE8B17BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. Bachelor, s projects are oriented into microwave technique, antennas, propagation, optoelectronics, EMC, medical applications. | | | |

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|---|---|---|---|
| AE8B17ELD | Electrodynamics | Z,ZK | 5 |
| The course AEB17ELD (electrodynamics) is a follow up of the course AEB17EMTA (Electromagnetic field theory). The course starts with a decomposition of electromagnetic field into planewaves, introduces radiation of waves and guides student through the interaction of electromagnetic waves with material boundaries. The theory of wave guides and transmission lines is also shown. The course ends with wave scattering. The knowledge gained in this course is needed for number of specialized master courses. | | | |
| AE8B17EMT | Electromagnetic Field Theory | Z,ZK | 8 |
| Students get acquainted with physics fundaments of the electromagnetic theory and with its mathematical description. Particularly, the course guides student through electrostatics, magnetostatics, introduces coupling between time varying fields and it is ends with an introduction to an electromagnetic wave. The knowledge gained in this course are needed for the subsequent course AE8B17ELD (Electrodynamics), for the course of circuit theory, theory of semiconductors and a number of specialized master courses. | | | |
| AE8B31AAC | Analog and Acitve Circuits | Z,ZK | 6 |
| The subject AE8B31AAC is oriented on presentation, matematical description, analysis and sythesis of basic analogue active circuits and function blocks of electronic systems based on basic semiconductor electronic components operating in linear and non-linear modes. | | | |
| AE8B31BAP | Bachelor Project | Z | 9 |
| The subject Bachelor Project is an independent final project for the Bachelor's degree study programme. A student will choose a topic from a range of topics related to his or her field of study, which will be specified by branch department or branch departments. The Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B31CIR | Circuit Theory | Z,ZK | 8 |
| The subject AE8B31CIR is a complet systematic presentation of electrical circuit theory. It is based on general physical nature of electromagnetic effects, an electric circuit is presented as a special quasistationary case of electromagnetic field. It defines basic circuit quantities (voltage, current) and basic circuit elements modeling all kinds of actual energy interactions. The subject is specifically oriented on linear electrical circuit (analogue LTI systems), it presents basic priciples and theorems of circuit theory, and analysis methods of linear circuits working in steady and transient states (modes), respectively. The time domain and frequency domain analysis is strictly differentiated. "System? characterization is applied on circuit transfer properties analysis, stability analysis, and feedback theory. At the end the subject deals with basis of discrete LTI systems theory. | | | |
| AE8B31ELE | Elements of Electronics | KZ | 4 |
| The subject AE8B31ELE (B-ELE) is a free continuation of the subject AE8B32IES (B-IES), now with technical contents yet, that provides elementary basis of electrical and electronic engineering, describes and explains common contexts among electrical phenomena, that are important for subsequent specialized subjects (for instance AE8B31CIR (B-CIR), AE8B31DIT (B-DIT), AE8B31EMT (B-EMT), AE8B31SAS (B-SAS).). The subject education uses relatively simple, elementary mathematical and physical methods adequate to the 2nd semester of the bachelor study stage. The subject provides basis of: - electromagnetic field and electrical circuit theory - semiconductor components theory - signal and system theory - digital and microprocessor technique. | | | |
| AE8B32DCL | Digital Signal Processing and Communication Laboratory | Z | 2 |
| This is a shared practical laboratory jointly practicing theoretical foundations gained in Digital Signal Processing (B-DSP), Digital Communications (B-DCM) and Data Network Theory (B-DNT) courses. It demonstrates how these areas together allow designing a complex functional system. During the course, students will design a set of building blocks based on individual pieces of knowledge from the all above stated courses allowing at the end to build complex demonstration signal processing and communication systems. The laboratory uses a computer based simulation system platform (e.g. Matlab) to practically verify the system functionality and its performance. It also demonstrates how various CAD and mathematical SW tools can be used in designing the system. | | | |
| AE8B32DNT | Data Networks Theory | Z,ZK | 5 |
| AE8B32DSP | Digital Signal Processing | Z,ZK | 5 |
| This subject is focused upon basics in the digital signal processing, systems and methods for digital signal processing. | | | |
| AE8B32IES | Introduction to Electronic Systems | Z | 2 |
| This is a motivation subject with syllabus composed of a set of demonstrations and measurements. Its content is divided into several themes. Students have a choice from this offer based on their pre-knowledge. The goal is to complete the missing knowledge and skills which may vary in students comming from various schools. The next goal is to get an idea about the scope of the OES programme. | | | |
| AE8B33BAP | Bachelor Project | Z | 9 |
| AE8B34BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B34EOD | Electronic and Optoelectronic Devices | Z,ZK | 6 |
| This course introduces the basic theory, principles of operation and properties of electronic and optoelectronic devices. Physical principles of operation, device structures and characteristics are explained together with adequate models for small- and large-signal. Basic applications in analogue and digital electronics are examined. In seminars and labs, students are introduced to basic principles of device simulation, measurement of device characteristics and extraction of device parameters. Operation of electron devices in electronic systems is then analyzed using the PSpice simulator. | | | |
| AE8B34SST | Solid State Physics | Z,ZK | 4 |
| The subject is aimed on solid state physics including some parts of statistical physics. The subject informs about basic properties of materials used in electronics, esp. about semiconductors. | | | |
| AE8B35BAP | Bachelor Project | Z | 9 |
| AE8B35FCS | Feed-Back Control Systems | Z,ZK | 6 |
| Foundation course of automatic control. Introduction to basic concepts and properties of dynamic systems of physical, engineering, biological, economics, robotics and informatics nature. Basic principles of feedback and its use as a tool for altering the behavior of systems and managing uncertainty. Classical and modern methods for analysis and design of automatic control systems. Students specialized in systems and control will build on these ideas and knowledge in the advanced courses to follow. Students of other branches and programs will find out that control is a inspiring, ubiquitous and entertaining field worth of a future cooperation. | | | |
| AE8B36BAP | Bachelor Project | Z | 9 |
| AE8B37BAP | Bachelor Project | Z | 9 |
| Independent final project for the Bachelor'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 Bachelor's project will be defended in front of the board of examiners for the comprehensive final examination. | | | |
| AE8B37DCM | Digital Communications | Z,ZK | 5 |
| The course provides fundamentals of digital communications theory: modulation, classical coding, channel models, and basic principles of decoding. The exposition is systematically built along the theoretical lines which allow to reveal all inner connections and principles. This allows students to develop the knowledge and use it in an active way in a design and construction of the communication systems. The course provides a necessary fundamental background for subsequent more advanced communications theory courses. | | | |
| AE8B37DIT | Digital Design | Z,ZK | 5 |
| The goal of this course is to introduce the philosophy of digital circuits' design, to provide formal description of combinational and sequential logical circuits, their functional blocks. Both mathematical and functional description, as well as minimization algorithms for output and transient functions of digital components and circuits is presented. Karnaugh maps, latch elements, finite-state Mealy and Moore machines are the essential part of the content. The subject matter discussed will be tested on the typical design of digital circuits. | | | |

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| AE8B37SAS | Signals and Systems | Z,ZK | 8 |
| Continuous and discrete time signal representation in time and frequency domain. Stochastic signals and their parameters. Elementary principles of analog modulations with their noise conditions. Fundamental course for further study focusing on communication, measurement and signal processing. | | | |
| AE8B37SSP | Statistical Signal Processing | Z,ZK | 6 |
| The course provides fundamentals in three main domains of the statistical signal processing: 1) estimation theory, 2) detection theory, 3) optimal and adaptive filtering. The statistical signal processing is a core theory with many applications ranging from digital communications, audio and video processing, radar and radio navigation, measurement and experiment evaluation, etc. | | | |
| AE8B38BAP | Bachelor Project | Z | 9 |
| AE8B38EME | Electronic Measurements | KZ | 4 |
| The course is focused to metrology fundamentals and uncertainty apparatus. It explains both elementary principles and selected advanced methods used in electronics, telecommunications and radio communications. | | | |
| AE8B39BAP | Bachelor Project | Z | 9 |
| BEEZB | Safety in Electrical Engineering for a bachelor´s degree | Z | 0 |
| The purpose of the safety course is to give the students basic knowledge of electrical equipment and installation as to avoid danger arising from operation of it. This introductory course contains fundamentals of Safety Electrical Engineering. In this way the students receive qualification of instructed person that enables them to work on electrical equipment. | | | |
| BEEZZ | Basic health and occupational safety regulations | Z | 0 |
| The guidelines were worked out based on The Training Scheme for Health and Occupational Safety designed for employees and students of the Czech Technical University in Prague, which was provided by the Rector´s Office of the CTU. Safety is considered one of the basic duties of all employees and students. The knowledge of Health and Occupational Safety regulations forms an integral and permanent part of qualification requirements. This program is obligatory. | | | |

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