Study plan

Name of study plan: Teaching of electrical engineering and cybernetics subjects for secondary schools

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: 120
Elective courses credits: 0
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: 84
The role of the block: P

Code of the group: 2025_MUCIDIP
Name of the group: Diploma Thesis
Requirement credits in the group: In this group you have to gain 9 credits
Requirement courses in the group: In this group you have to complete 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
BUM-DIP	**Diploma Thesis**	Z	9	21S		P

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIDIP Name=Diploma Thesis

BUM-DIP	Diploma Thesis				Z	9

Code of the group: 2025_MUCIPO
Name of the group: Compulsory subjects of the programm
Requirement credits in the group: In this group you have to gain 24 credits
Requirement courses in the group: In this group you have to complete 4 courses
Credits in the group: 24
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
BUM-DES	**Didaktika elektronické správy výuky**	Z,ZK	6	2P+2C		P
BUM-DEZ	**Didaktika elektronických u ebních zdroj**	Z,ZK	6	2P+2C		P
BUM-DVE	**Didaktika výuky v elektrotechnických oborech**	Z,ZK	6	2P+2C		P
BUM-DVK	**Didaktika výuky v kybernetických oborech**	Z,ZK	6	2P+2C		P

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPO Name=Compulsory subjects of the programm

BUM-DES	Didaktika elektronické správy výuky				Z,ZK	6
BUM-DEZ	Didaktika elektronických u ebních zdroj				Z,ZK	6
BUM-DVE	Didaktika výuky v elektrotechnických oborech				Z,ZK	6
BUM-DVK	Didaktika výuky v kybernetických oborech				Z,ZK	6

Code of the group: 2025_MUCIPP

Name of the group: Compulsory subjects of the programm
Requirement credits in the group: In this group you have to gain 24 credits
Requirement courses in the group: In this group you have to complete 3 courses
Credits in the group: 24
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
BUM-PPP	**Propedeutikum pedagogické praxe**	KZ	6	2P+2C		P
BUM-RPP	**Reflexe pedagogické praxe**	Z	3	1P+1C		P
BUM-SPP	**Souvislá pedagogická praxe**	KZ	15	450XH		P

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPP Name=Compulsory subjects of the programm

BUM-PPP	Propedeutikum pedagogické praxe	KZ	6
BUM-RPP	Reflexe pedagogické praxe	Z	3
BUM-SPP	Souvislá pedagogická praxe	KZ	15

Code of the group: 2025_MUCIP
Name of the group: Compulsory subjects of the programm
Requirement credits in the group: In this group you have to gain 27 credits
Requirement courses in the group: In this group you have to complete 7 courses
Credits in the group: 27
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
32MC-P-MSVV-01	**Social Science Research Methods**	Z,ZK	3	1P+1C		P
32MC-P-ODID-01	**General Didactics**	Z,ZK	5	2P+1C		P
32MC-P-PEDO-01	**General Pedagogy**	Z,ZK	5	2P+1C		P
32MC-P-PSEP-01	**Psychology in Educational Process**	Z,ZK	5	2P+1C		P
32MC-P-U SP-01	**Role of Teachers in Modern Society**	ZK	3	2P+0C		P
BUM-SEM	**Semester Project of Diploma Thesis**	KZ	3	7S		P
32MC-P-PEDS-01	**Social Pedagogy**	ZK	3	2P+0C		P

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIP Name=Compulsory subjects of the programm

32MC-P-MSVV-01	Social Science Research Methods	Z,ZK	3
32MC-P-ODID-01	General Didactics	Z,ZK	5
32MC-P-PEDO-01	General Pedagogy	Z,ZK	5
32MC-P-PSEP-01	Psychology in Educational Process	Z,ZK	5
32MC-P-U SP-01	Role of Teachers in Modern Society	ZK	3
BUM-SEM	Semester Project of Diploma Thesis	KZ	3
32MC-P-PEDS-01	Social Pedagogy	ZK	3

Name of the block: Compulsory elective courses
Minimal number of credits of the block: 36
The role of the block: PV

Code of the group: 2025_MUCIPVO
Name of the group: Compulsory elective subjects of the programme
Requirement credits in the group: In this group you have to gain at least 18 credits (at most 36)
Requirement courses in the group: In this group you have to complete at least 3 courses (at most 6)
Credits in the group: 18
Note on the group: # ~Student musí z této skupiny absolvovat předmět BUM-OTP Obvodové techniky přístrojů nebo BUM-EPR Elektronická praktika

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
BUM-AZS	**Signal analysis and processing**	Z,ZK	6	2P+2C	L	PV
BUM-EPR	**Elektronická praktika**	Z,ZK	6	2P+2L	Z	PV
B3B33KUI	**Cybernetics and Artificial Intelligence** *Tomáš Svoboda, Petr Pošík* **Tomáš Svoboda** *Tomáš Svoboda (Gar.)*	Z,ZK	6	2P+2C	L	PV
BUM-OTP	**Obvodové techniky p ístroj**	Z,ZK	6	2P+2L	Z	PV
BUM-ROB	**Robotics in Education** *Martin Hlinovský, Vojt ch Petrucha, Pavel Krsek* **Martin Hlinovský** *Martin Hlinovský (Gar.)*	Z,ZK	6	2P+2L		PV
BUM-SES	**Senzory a zpracování signál**	Z,ZK	6	2P+2C	L	PV

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPVO Name=Compulsory elective subjects of the programme

BUM-AZS	Signal analysis and processing	Z,ZK	6

The course covers both analog input-output blocks for signal transmission and processing, as well as the possibilities of subsequent digital signal processing and measured data analysis. It discusses circuit solutions for amplifiers and filters, including their design, as well as methods for processing digitized data. Students will become familiar with both theoretical principles of signal processing and contemporary means of implementation, including analog structures and algorithms for subsequent digital processing.

BUM-EPR	Elektronická praktika	Z,ZK	6
B3B33KUI	Cybernetics and Artificial Intelligence	Z,ZK	6

The course introduces the students into the field of artificial intelligence and gives the necessary basis for designing machine control algorithms. It advances the knowledge of state space search algorithms by including uncertainty in state transition. Students are introduced into reinforcement learning for solving problems when the state transitions are unknown, which also connects the artificial intelligence and cybernetics fields. Bayesian decision task introduces supervised learning. Learning from data is demonstrated on a linear classifier. Students practice the algoritms in computer labs.

BUM-OTP	Obvodové techniky p ístroj	Z,ZK	6
BUM-ROB	Robotics in Education	Z,ZK	6
BUM-SES	Senzory a zpracování signál	Z,ZK	6

Code of the group: 2025_MUCIPV1

Name of the group: Compulsory elective subjects of the programme - Group 1

Requirement credits in the group: In this group you have to gain at least 6 credits (at most 10)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 2)

Credits in the group: 6

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
BUM-MLB	**Microcontroller Labs**	Z,ZK	6	2P+2L	L	PV
32ME-P-PRSK-01	**Presentation and Communication Skills**	ZK	4	0P+4C		PV

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPV1 Name=Compulsory elective subjects of the programme - Group 1

BUM-MLB	Microcontroller Labs	Z,ZK	6

The goal of this course is to make students acquainted with recent interesting applications, smart sensors circuits and peripherals handled by microcontrollers and to show them how to make an interesting lab experiment. In a lab students will program their own application and measure its properties. Because of usage of a programming language C it will be possible to focus on the practical part of the realization and show the pedagogical and didactic methods for experiments creation.

32ME-P-PRSK-01	Presentation and Communication Skills	ZK	4

Code of the group: 2025_MUCIPV2

Name of the group: Compulsory elective subjects of the programme - Group 2

Requirement credits in the group: In this group you have to gain at least 6 credits (at most 15)

Requirement courses in the group: In this group you have to complete at least 2 courses (at most 5)

Credits in the group: 6

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
32MC-P-OSPN-01	**Personality: Pathology and Normality**	KZ	3	1P+1C		PV
32MC-P-SVZP-01	**Education of Pupils with Special Educational Needs**	ZK	3	1P+1C		PV
32MC-P-PSHY-01	**Psycho-hygiene Aspects of Teaching Profession**	Z,ZK	3	1P+1C		PV

32MC-P-SPKO-01	**Social and Pedagogical Communication**	KZ	3	0P+2C		PV
32MC-P-TECR-01	**Impacts of Information Technology on Society**	Z,ZK	3	1P+1C		PV
32MC-P-RIZZ-01	**Risk Behavior of Pupils**	KZ	3	1P+1C		PV

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPV2 Name=Compulsory elective subjects of the programme - Group 2

32MC-P-OSPN-01	Personality: Pathology and Normality	KZ	3
32MC-P-SVZP-01	Education of Pupils with Special Educational Needs	ZK	3
32MC-P-PSHY-01	Psycho-hygiene Aspects of Teaching Profession	Z,ZK	3
32MC-P-SPKO-01	Social and Pedagogical Communication	KZ	3
32MC-P-TECR-01	Impacts of Information Technology on Society	Z,ZK	3
32MC-P-RIZZ-01	Risk Behavior of Pupils	KZ	3

Code of the group: 2025_MUCIPV3

Name of the group: Compulsory elective subjects of the programme - Group 3

Requirement credits in the group: In this group you have to gain at least 6 credits (at most 24)

Requirement courses in the group: In this group you have to complete at least 1 course (at most 4)

Credits in the group: 6

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
BUM-EPR	**Elektronická praktika**	Z,ZK	6	2P+2L	Z	PV

Characteristics of the courses of this group of Study Plan: Code=2025_MUCIPV3 Name=Compulsory elective subjects of the programme - Group 3

BUM-EPR	Elektronická praktika	Z,ZK	6

List of courses of this pass:

Code	Name of the course	Completion	Credits
32MC-P-MSVV-01	Social Science Research Methods	Z,ZK	3
32MC-P-ODID-01	General Didactics	Z,ZK	5
32MC-P-OSPN-01	Personality: Pathology and Normality	KZ	3
32MC-P-PEDO-01	General Pedagogy	Z,ZK	5
32MC-P-PEDS-01	Social Pedagogy	ZK	3
32MC-P-PSEP-01	Psychology in Educational Process	Z,ZK	5
32MC-P-PSHY-01	Psycho-hygiene Aspects of Teaching Profession	Z,ZK	3
32MC-P-RIZZ-01	Risk Behavior of Pupils	KZ	3
32MC-P-SPKO-01	Social and Pedagogical Communication	KZ	3
32MC-P-SVZP-01	Education of Pupils with Special Educational Needs	ZK	3
32MC-P-TECR-01	Impacts of Information Technology on Society	Z,ZK	3
32MC-P-U SP-01	Role of Teachers in Modern Society	ZK	3
32ME-P-PRSK-01	Presentation and Communication Skills	ZK	4
B3B33KUI	Cybernetics and Artificial Intelligence	Z,ZK	6
The course introduces the students into the field of artificial intelligence and gives the necessary basis for designing machine control algorithms. It advances the knowledge of state space search algorithms by including uncertainty in state transition. Students are introduced into reinforcement learning for solving problems when the state transitions are unknown, which also connects the artificial intelligence and cybernetics fields. Bayesian decision task introduces supervised learning. Learning from data is demonstrated on a linear classifier. Students practice the algoritms in computer labs.			
BUM-AZS	Signal analysis and processing	Z,ZK	6
The course covers both analog input-output blocks for signal transmission and processing, as well as the possibilities of subsequent digital signal processing and measured data analysis. It discusses circuit solutions for amplifiers and filters, including their design, as well as methods for processing digitized data. Students will become familiar with both theoretical principles of signal processing and contemporary means of implementation, including analog structures and algorithms for subsequent digital processing.			
BUM-DES	Didaktika elektronické správy výuky	Z,ZK	6
BUM-DEZ	Didaktika elektronických u ebních zdroj	Z,ZK	6
BUM-DIP	Diploma Thesis	Z	9
BUM-DVE	Didaktika výuky v elektrotechnických oborech	Z,ZK	6
BUM-DVK	Didaktika výuky v kybernetických oborech	Z,ZK	6

BUM-EPR	Elektronická praktika	Z,ZK	6
BUM-MLB	Microcontroller Labs	Z,ZK	6
	The goal of this course is to make students acquainted with recent interesting applications, smart sensors circuits and peripherals handled by microcontrollers and to show them how to make an interesting lab experiment. In a lab students will program their own application and measure its properties. Because of usage of a programming language C it will be possible to focus on the practical part of the realization and show the pedagogical and didactic methods for experiments creation.		
BUM-OTP	Obvodové techniky p ístroj	Z,ZK	6
BUM-PPP	Propedeutikum pedagogické praxe	KZ	6
BUM-ROB	Robotics in Education	Z,ZK	6
BUM-RPP	Reflexe pedagogické praxe	Z	3
BUM-SEM	Semester Project of Diploma Thesis	KZ	3
BUM-SES	Senzory a zpracování signál	Z,ZK	6
BUM-SPP	Souvislá pedagogická praxe	KZ	15

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