Study plan

Name of study plan: Open Electronic Systems - RF and DSP Enginnering

Faculty/Institute/Others: Faculty of Electrical Engineering
Department: Department of Radioelectronics
Branch of study guaranteed by the department: RF and DSP Engineering
Garantor of the study branch: prof. Ing. Zbyněk Škvor, CSc.
Program of study: Open Electronic Systems
Type of study: Follow-up master 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: MDIPE
Name of the group: Diploma Thesis
Requirement credits in the group: In this group you have to gain at least 25 credits (at most 375)
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)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
AE0M32DIP	**Diploma project**	Z	25	0P + 36S	L	P
AE0M14DIP	**Diploma Project**	Z	25		L	P
AE0M33DIP	**Diploma Thesis**	Z	25	36S	L	P
AE0M38DIP	**Diploma Thesis**	Z	25	0P+36C	L	P
AE0M37DIP	**Diploma Thesis**	Z	25	36s	L	P
AE0M16DIP	**Diploma thesis**	Z	25	36s	L,Z	P
AE0M35DIP	**Diploma Thesis**	Z	25	36S	L	P
AE0M17DIP	**Diploma Thesis**	Z	25	36s	L	P
AE0M13DIP	**Diploma Thesis**	Z	25	36S	L	P
AE0M34DIP	**Diploma Thesis**	Z	25	36C	L	P
ADIP25	**Diploma Thesis**	Z	25	36s	L	P
AE4M99DIP	**Master Thesis**	Z	25		L	P
AE0M15DIP	**Master's thesis**	Z	25	36s	L	P

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

AE0M32DIP	Diploma project	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.			
AE0M14DIP	Diploma Project	Z	25
AE0M33DIP	Diploma Thesis	Z	25
AE0M38DIP	Diploma Thesis	Z	25
AE0M37DIP	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.			
AE0M16DIP	Diploma thesis	Z	25
AE0M35DIP	Diploma Thesis	Z	25

AE0M17DIP	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.			
AE0M13DIP	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.			
AE0M34DIP	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.			
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.			
AE4M99DIP	Master Thesis	Z	25
AE0M15DIP	Master's thesis	Z	25

Code of the group: MOESEBME
Name of the group: Safety of the master's studies
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
BEEZM	**Safety in Electrical Engineering for a master´s degree** *Vladimír Kůla, Ivana Nová, Josef Černohous* ***Ivana Nová*** *Vladimír Kůla (Gar.)*	Z	0	2BP+2BC	Z	P

Characteristics of the courses of this group of Study Plan: Code=MOESEBME Name=Safety of the master's studies

BEEZM	Safety in Electrical Engineering for a master´s degree	Z	0
The course provides for students of all programs periodic training guidelines for health and occupational safety and gives knowledge of electrical hazard of given branch of study. Students receive indispensable qualification according to the current Directive of the Dean.			

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: MOESEPO2
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
AE8M17AEC	**Antennas and EMC**	Z,ZK	5	3P+1L	L	PO
AE8M37ART	**Architectures of Rx/Tx Systems**	Z,ZK	5	4P+0L	Z	PO
AE8M37CAD	**CAD and Numerical Methods in RF Engineering**	KZ	3	2P+0C	L	PO
AE8M37MAM	**Microprocessors&Microcomputers**	Z,ZK	7	4P+2C	Z	PO
AE8M17OTT	**Optical&THz Techniques**	Z,ZK	3	2P+0L	Z	PO
AE8M37RML	**Radio Systems Measurement lab**	Z	5	0P+4L	Z	PO
AE8M17ROL	**RF and Optical Engineering Lab**	Z	5	0P+4L	Z	PO
AE8M17RFB	**RF Blocks Technology**	Z,ZK	7	6P+0L	Z	PO
AE8M17WCP	**Wireless Channels&Propagation**	Z,ZK	5	4P+0C	Z	PO

Characteristics of the courses of this group of Study Plan: Code=MOESEPO2 Name=Compulsory subjects of the branch

AE8M17AEC	Antennas and EMC	Z,ZK	5
AE8M37ART	Architectures of Rx/Tx Systems	Z,ZK	5
AE8M37CAD	CAD and Numerical Methods in RF Engineering	KZ	3
AE8M37MAM	Microprocessors&Microcomputers	Z,ZK	7

AE8M17OTT	Optical&THz Techniques	Z,ZK	3
AE8M37RML	Radio Systems Measurement lab	Z	5
AE8M17ROL	RF and Optical Engineering Lab	Z	5
AE8M17RFB	RF Blocks Technology	Z,ZK	7
AE8M17WCP	Wireless Channels&Propagation	Z,ZK	5
The aim of the course is to provide deep knowledge of the wireless propagation channel in real environments for the planning of terrestrial and satellite wireless links. It will include a theoretical background for the radiowave propagation in the atmosphere of the Earth as well as design procedures recommended by ITU-R for selected applications, such as both terrestrial and satellite, fixed and mobile links in various frequency bands.			

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

Code of the group: MOESEVOL
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: ~Student can choose arbitrary subject of the master's program (EEM - Electrical Engineering, Power Enginnering and Management, KME - Communications, Multimedia and Electronics, KYR - Cybernetics and Robotics, OI - Open Informatics, OES - Open Electronics Systems) which is not part of his curriculum. Student can choose with consideration of recommendation of the branch guarantee.You can find a selection of optional courses organized by the departments on the web site http://www.fel.cvut.cz/cz/education/volitelne-predmety.html\\

Code of the group: MOESEH
Name of the group: Humanities subjects
Requirement credits in the group: In this group you have to gain at least 4 credits (at most 22)
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**
AE0M16HT2	**History of science and technology 2**	Z,ZK	4	2+2s	L	v
AE0M16FI2	**Philosophy II**	Z,ZK	4	2+2s	L	v
AE0M16MPS	**Psychology**	Z,ZK	4	2+2s	Z	v
AE0M16TE1	**Theology**	Z,ZK	4	2+2s	L	v
A003TV	**Physical Education**	Z	2	0+2	L,Z	v

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

AE0M16HT2	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			
AE0M16FI2	Philosophy II	Z,ZK	4
The course is oriented on the transdisciplinar aspects of philosophy, informatics, physics, mathematics and biology.			
AE0M16MPS	Psychology	Z,ZK	4
AE0M16TE1	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 graws our civilization up.			
A003TV	Physical Education	Z	2

Code of the group: MEJK
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 of the group: METV
Name of the group: Physical 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
A0M03TVI	**Physical Education I**	Z	1	2s	Z	v
A0M03TVII	**Physical Education II**	Z	1	2s	L	v
A0M03TVIII	**Physical Education III**	Z	1	2s	Z	v
A0M03TVIV	**Physical Education IV**	Z	1	2s	L	v
A0M03TVK	**Physical Education Course**	Z	1	7dní	Z,L	v

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

A0M03TVI	Physical Education I	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.

A0M03TVII	Physical Education II	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.

A0M03TVIII	Physical Education III	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.

A0M03TVIV	Physical Education IV	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.

A0M03TVK	Physical Education Course	Z	1

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

A003TV	Physical Education	Z	2
A0M03TVI	Physical Education I	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.		
A0M03TVII	Physical Education II	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.		
A0M03TVIII	Physical Education III	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.		
A0M03TVIV	Physical Education IV	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.		
A0M03TVK	Physical Education Course	Z	1
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.		
AE0M13DIP	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.		
AE0M14DIP	Diploma Project	Z	25
AE0M15DIP	Master's thesis	Z	25
AE0M16DIP	Diploma thesis	Z	25
AE0M16FI2	Philosophy II	Z,ZK	4
	The course is oriented on the transdisciplinar aspects of philosophy, informatics, physics, mathematics and biology.		
AE0M16HT2	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		
AE0M16MPS	Psychology	Z,ZK	4
AE0M16TE1	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 graws our civilization up.		
AE0M17DIP	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.		
AE0M32DIP	Diploma project	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.		
AE0M33DIP	Diploma Thesis	Z	25
AE0M34DIP	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.		
AE0M35DIP	Diploma Thesis	Z	25
AE0M37DIP	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.		
AE0M38DIP	Diploma Thesis	Z	25
AE4M99DIP	Master Thesis	Z	25
AE8M17AEC	Antennas and EMC	Z,ZK	5
AE8M17OTT	Optical&THz Techniques	Z,ZK	3
AE8M17RFB	RF Blocks Technology	Z,ZK	7
AE8M17ROL	RF and Optical Engineering Lab	Z	5

AE8M17WCP	Wireless Channels&Propagation	Z,ZK	5
The aim of the course is to provide deep knowledge of the wireless propagation channel in real environments for the planning of terrestrial and satellite wireless links. It will include a theoretical background for the radiowave propagation in the atmosphere of the Earth as well as design procedures recommended by ITU-R for selected applications, such as both terrestrial and satellite, fixed and mobile links in various frequency bands.			
AE8M37ART	Architectures of Rx/Tx Systems	Z,ZK	5
AE8M37CAD	CAD and Numerical Methods in RF Engineering	KZ	3
AE8M37MAM	Microprocessors&Microcomputers	Z,ZK	7
AE8M37RML	Radio Systems Measurement lab	Z	5
BEEZM	Safety in Electrical Engineering for a master´s degree	Z	0
The course provides for students of all programs periodic training guidelines for health and occupational safety and gives knowledge of electrical hazard of given branch of study. Students receive indispensable qualification according to the current Directive of the Dean.			

For updated information see http://bilakniha.cvut.cz/en/f3.html
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