Recomended pass through the study plan

Name of the pass: Specialization Management of Power Engineering and Electrotechnics - Passage through study

Faculty/Institute/Others: Faculty of Electrical Engineering
Department:
Pass through the study plan: Electrical Engineering, Power Engineering and Management - Management of Power Eng. and Electr.
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Electrical Engineering, Power Engineering and Management
Type of study: Follow-up master full-time
Note on the pass:

Coding of roles of courses and groups of courses:
P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):
KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

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
BEZM	**Safety in Electrical Engineering for a master´s degree** *Vladimír Kůla, Radek Havlíček, Ivana Nová, Josef Černohous **Radek Havlíček** Vladimír Kůla (Gar.)*	Z	0	2BP+2BC	Z	P
B1M15IAP	**Engineering Applications** *Jan Kyncl Jan Kyncl (Gar.)*	Z,ZK	5	2P+2C	Z	P
B1M13JAS1	**Quality and Reliability** *Zbyněk Plachý, Pavel Mach, Denis Froš, Martin Molhanec **Pavel Mach** Pavel Mach (Gar.)*	Z,ZK	6	2P+2C	Z	P
B1M15PPE1	**Elements and Operation of Electrical Power Systems** *Ivo Doležel, Zdeněk Müller Zdeněk Müller (Gar.)*	Z,ZK	5	2P+2S	Z	P
B1M14SSE	**Machinery and Structures of Power Plants** *Petr Kočárník, Jiří Šťastný **Petr Kočárník** Petr Kočárník (Gar.)*	Z,ZK	5	2P+2C	Z	P
B1M16FIU	**Financial accounting** *Josef Černohous, Jiří Vašíček, Július Bemš **Július Bemš** Jiří Vašíček (Gar.)*	Z,ZK	5	2P+2S	Z	P
2018_MEEMH	**Humanitní předměty** *B0M16FIL,B0M16HVT,..... (see the list of groups below)*	Min. cours. 1 Max. cours. 1	Min/Max 5/5			P

Number of semester: 2

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
B1M16EKE1	**Economy of Power Industry** ***Tomáš Králík***	Z,ZK	5	2P+2C	L	P
B1M16EVE	**Economics of Power Generation** ***Martin Beneš***	Z,ZK	5	2P+2S	L	PZ
B1M16FIM1	**Financial Management** ***Tomáš Králík***	Z,ZK	5	2P+2S	L	PZ
B1M16MAR	**Marketing** ***Ondřej Pešek***	Z,ZK	5	2P+2S	L	PZ
B1M16OVY	**Operations Research** ***Jaroslav Knápek***	Z,ZK	5	2P+2C	L	PZ
2018_MEEMPV2	**Povinně volitelné předměty specializace** *B1M16CTR1,B1M16DES,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 9	Min/Max 15/45			PV

Number of semester: 3

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
B1MPROJ	**Individual project** *Josef Černohous, Jan Kyncl, Zdeněk Müller, Jiří Vašíček, Jan Jandera, Karel Künzel, Ivana Beshajová Pelikánová, Jan Bauer, Oldřich Starý* ***Josef Černohous*** *Jan Jandera (Gar.)*	Z	5	0p+4s	Z	P
B1M16EKL	**Ecology and economy** *Jaroslav Knápek* ***Jaroslav Knápek*** *Jaroslav Knápek (Gar.)*	Z,ZK	5	3P+1S	Z	PZ
B1M16MES	**Management and Economics of Power Systems** *Oldřich Starý, Tomáš Králík* ***Tomáš Králík*** *Oldřich Starý (Gar.)*	Z,ZK	5	2P+2S	Z	PZ
B1M16MNR	**Managerial Decision Making** *Jaroslav Knápek, Martin Beneš* ***Jaroslav Knápek*** *Jaroslav Knápek (Gar.)*	Z,ZK	5	2P+2C	Z	PZ
2018_MEEMPV2	**Povinně volitelné předměty specializace** *B1M16CTR1,B1M16DES,..... (see the list of groups below)*	Min. cours. 3 Max. cours. 9	Min/Max 15/45			PV

Number of semester: 4

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
BDIP25	**Diploma Thesis**	Z	25	22s	L	P
B1M16EKM	**Econometrics and economic applications**	Z,ZK	4	2P+2S	L	PZ

List of groups of courses of this pass with the complete content of members of individual groups

Kód	Name of the group of courses and codes of members of this group (for specification see here or below the list of courses)	Completion	Credits	Scope	Semester	Role
2018_MEEMH	**Humanitní předměty**	**Min. cours. 1 Max. cours. 1**	**Min/Max** 5/5			**P**

B0M16FIL		B0M16HVT	History of science and technolog ...	B0M16HSD1	History of economy and social st ...
B0M16PSM	Psychology	A003TV	Physical Education	B0M16TEO	Theology

2018_MEEMPV2	**Povinně volitelné předměty specializace**	**Min. cours. 3 Max. cours. 9**	**Min/Max** 15/45		**PV**

B1M16CTR1	Controlling	B1M16DES	Power Transport Systems	B1M16EUE1	Economy of Energy Use
B1M15ETT	Electrical Heat	B1M16ENI	Environmental Engineering	B1M16MAS1	Marketing Strategies
B1M16RES	Development of Energy Systems	B1M16JAK	Quality management	B1M16STA	Statistical methods in economics

List of courses of this pass:

Code	Name of the course	Completion	Credits
A003TV	Physical Education	Z	2
B0M16FIL		Z,ZK	5
B0M16HSD1	History of economy and social studies	Z,ZK	5

This subject deals with the history of the Czech society in the 19th - 21th centuries. It follows the forming of the Czech political representation, its aims and achieved results as well as the social and cultural development and coexistence of the various ethnical groups in the Czech countries.

B0M16HVT	History of science and technology 2	Z,ZK	5
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			
B0M16PSM	Psychology	Z,ZK	5
B0M16TEO	Theology	Z,ZK	5
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.			
B1M13JAS1	Quality and Reliability	Z,ZK	6
Terminology and definitions from the area of quality and reliability and their control, philosophy of quality, systems of quality control in the world. Reliability as a part of quality. Basic definitions from the area of reliability, basic distributions used in reliability and their basic characteristics. Back-up using a warm and cold standby, types of warm and cold standbys. Reliability of components and systems, calculation of reliability using composition and decomposition. and using a method of a list. Basic statistical methods and tools joined with quality control, managerial tools for quality control. Techniques FMEA and QFFD, house of quality. Capability of a process. Taguchi loss function. Audits. Statistical inspection.			
B1M14SSE	Machinery and Structures of Power Plants	Z,ZK	5
The aim of the course is to acquaint students with forms of energy transformation in power plants, describing the function of power facilities, their structure, properties and characteristics.			
B1M15ETT	Electrical Heat	Z,ZK	5
B1M15IAP	Engineering Applications	Z,ZK	5
B1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
B1M16CTR1	Controlling	Z,ZK	5
The aim of the course is to present Management Control as a modern approach to Management of Enterprise, based on the Process and Activity Based Management which supports innovative changes by the application of Project Management principles. The focus is on the integrative potential of Management Control in the Management of Enterprise and on the key role played by Project Management. Special attention is paid to technical-financial integration and its impact. The emphasis is on Project Management of innovation processes, which guarantee the company not merely to survive, but also to achieve high performance. The computerized models are used for presentation key principles, procedures and also key links between the controlled entities and used managerial tools.			
B1M16DES	Power Transport Systems	Z,ZK	5
The course is focused on economical aspects of design and operation of various technical systems for various energy forms. That is road, railway and ship transport of solid and liquid fuel, district heating system, cable car and convenyor belt transport for solid fuel and mainly grid for electricity (power) transport.			
B1M16EKE1	Economy of Power Industry	Z,ZK	5
Fundamentals of financing of power companies. Cost structure of power generation and distribution. Prices and tariff systems for power, heat and gas production and distribution. Examples of economic evaluation and investment appraisal of the typical project in power sector. Renewable energy sources, externalities. Energy policy and energy law in CR. Liberalization and power market development.			
B1M16EKL	Ecology and economy	Z,ZK	5
Development of environmental protection. Sustainable development. Global environmental problems and their aspects. Greenhouse effect and climate changes. Fossil fuels, nuclear fuel cycle and environmental impacts. Support schemes for renewable energy sources utilization. Economic effectiveness of renewable energy sources projects. Regulatory and economic instruments for economic activities regulation. Externalities. Environmental indicators.			
B1M16EKM	Econometrics and economic applications	Z,ZK	4
History of Econometrics, econometric models, input-output models, modelling of demand, time series models, production functions, linear regression models, simultaneous equations models, econometric analysis of economic situation			
B1M16ENI	Environmental Engineering	Z,ZK	5
The course focuses on describing the interdisciplinary relationships of living and non-living nature with electrical engineering. By integrating electrical engineering into classical environmental practices, new methods and techniques are being developed that either focus on predictive environmental protection from industrial influences or address their consequences. The course discusses both routinely used technologies as well as prototype and laboratory technologies, mostly applicable to insitu remediation. Inspiration from self-renewing natural processes provides the ideal motivation and platform for developing and testing new innovative methods. The course is complemented by laboratory work carried out at CTU, UCT, IMCH and selected excursions. Laboratory facilities have been created for the course at the FEE CTU in Prague.			
B1M16EUE1	Economy of Energy Use	Z,ZK	5
Organization and energy management of company, buildings or energy systems. Energy need and consumption, energy balance. Energy characterization of aggregate, secondary energy sources. Energy audit and feasibility study, optimization of energy management of energy systems. Prices and tariffs, economy and financial analysis.			
B1M16EVE	Economics of Power Generation	Z,ZK	5
Power sources overview, energy processes analysis.			
B1M16FIM1	Financial Management	Z,ZK	5
Principles of finance, present value and alternative cost of capital, net present value, valuation of bonds and stocks, investment decision and net present value, risk and alternative cost of capital, risk and return, lease or buy, taxes, inflation and return, financial and real options, option valuation and application, hedging, short term finance, cash flow management.			
B1M16FIU	Financial accounting	Z,ZK	5
Principles of accounting. Assets, inventory and financial investment book keeping. Debt and equity capital. Cost, revenues and profit. Tax system and accounting. Balance sheet, profit and loss account. Cash flow statement. Analysis of company's financial position. International accounting standards. Auditing, consolidated statements. Hello.			
B1M16JAK	Quality management	Z,ZK	5
History of quality management (QM), Current approaches to quality management, quality management system (QMS) based on ISO 9001, Process management, Quality planning, Metrology in QM, Control of documents and records, Internal audits of QMS, Continual improvement of QMS, Integrated management, Statistic methods in QM, Accreditation and certification			
B1M16MAR	Marketing	Z,ZK	5
The role and functions of the marketing management. Marketing research and marketing information system. Concepts of marketing strategy. The use of product life cycle and portfolio. Marketing-mix. Product and service policy, pricing and contractation policy, communication, distribution. Controlling and audit.			
B1M16MAS1	Marketing Strategies	Z,ZK	5
Broadening of basic knowledge of marketing. The analysis of marketing strategies in different market situations. The firm`s behaviour under competition and competitive advantage. Case studies in the field of product policy, price and condition policy, communication policy and distribution policy.			
B1M16MES	Management and Economics of Power Systems	Z,ZK	5
This course will give an overview of the various aspects of power supply with special emphasis on power management. The course characterises energy costs and marginal costs for determination of prices and tariffs. Energy market principles and operational decision making are integral parts of the course as well.			

B1M16MNR	Managerial Decision Making	Z,ZK	5
System approach and decision making, Decision models, Games theory, Decision making under uncertainty and risk, Decisions with multiple objectives, Stochastic programming, Expert systems, Cluster analysis			
B1M16OVY	Operations Research	Z,ZK	5
Art of modeling and elements of decision models, Linear programming, Transportation problem, Integer linear programming, Introduction to graphs theory, Nonlinear programming, Dynamic programming, Monte Carlo simulation, Project management (CPM, PERT).			
B1M16RES	Development of Energy Systems	Z,ZK	5
In this subject the basic questions of power stations design is solved. This design is discussed from viewpoint of ecology and level of used technology. Special focus is on future importance of classical and renewable energy resources. These kinds of energy resources are considered as the most important factor of future development of appropriate power industry systems. The subject provides overview of practical application of modern technologies to guarantee the development of energetic systems.			
B1M16STA	Statistical methods in economics	Z,ZK	5
Basic Concepts. Statistical series. Assortment. Distributions of frequencies. One-dimensional descriptive characteristics. Measures of variables, coefficient of skewness, coefficient of excess. Points estimates of basic characteristics. Interval estimates of basic characteristics. Hypothesis testing of basic characteristics. Individual indexs number. Aggregative indexs. Variable-structure indexs. Multifactor indexs . Correlation and regression, Basic Concepts. Measurement of dependence intensity. Time series, concepts, qualities. Chronological average . Time series - trends and extrapolation.			
B1MPROJ	Individual project	Z	5
Independent work in the form of a project. A student will choose a topic from a list of topics specified by branch department. The project will be defended within the framework of a subject.			
BDIP25	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.			
BEZM	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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