Study plan

Name of study plan: Electrical Engineering, Power Engineering and Management - Management of Power Eng. and Electr.

Faculty/Institute/Others: Faculty of Electrical Engineering
Department:
Branch of study guaranteed by the department: Welcome page
Garantor of the study branch:
Program of study: Electrical Engineering, Power Engineering and Management
Type of study: Follow-up master 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: 56
The role of the block: P

Code of the group: 2018_MEEMEP
Name of the group: Compulsory subjects of the programme
Requirement credits in the group: In this group you have to gain 31 credits
Requirement courses in the group: In this group you have to complete 6 courses
Credits in the group: 31
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
BE1M16EKE1	**Economy of Power Industry** *Tomáš Králík, Július Bemš* ***Tomáš Králík*** *Tomáš Králík (Gar.)*	Z,ZK	5	2P+2S	L	P
BE1M15PPE1	**Elements and Operation of Electrical Power Systems** *Zdeněk Müller, Jan Hlaváček Zdeněk Müller (Gar.)*	Z,ZK	5	2P+2S	Z	P
BE1M15IAP	**Engineering Applications** *Jan Kyncl, Ladislav Musil*	Z,ZK	5	2P+2C	Z	P
BE1MPROJ	**Individual project** *Jiří Vašíček, Zdeněk Müller, Jan Kyncl, Jan Jandera, Josef Černohous* ***Josef Černohous*** *Jan Jandera (Gar.)*	Z	5	0p+4s	Z	P
BE1M14SSE	**Machinery and Structures of Power Plants** *Evžen Thöndel* ***Evžen Thöndel***	Z,ZK	5	2P+2C	Z	P
BE1M13JAS1	**Quality and Reliability** *Pavel Mach, Martin Molhanec* ***Pavel Mach*** *Pavel Mach (Gar.)*	Z,ZK	6	2P+2C	Z,L	P

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMEP Name=Compulsory subjects of the programme

BE1M16EKE1	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.			
BE1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
The course introduces basic technical principles of electricity transmission and distribution. There are explained parameters of power systems key elements, steady states, transient and failure phenomena, main principles of dimensioning and protecting, power quality and its control and electrical machines characteristics and utilization.			
BE1M15IAP	Engineering Applications	Z,ZK	5
The aim of the course is to get an overview of solving basic mathematical problems occurring in engineering practice using computer algebra systems			
BE1MPROJ	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.			
BE1M14SSE	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.			
BE1M13JAS1	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.			

Code of the group: 2018_MEEMEDIP
Name of the group: Diploma Thesis
Requirement credits in the group: In this group you have to gain 25 credits
Requirement courses in the group: In this group you have to complete 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
BDIP25	**Diploma Thesis**	Z	25	22s	L	P

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMEDIP Name=Diploma Thesis

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.

Name of the block: Povinné předměty zaměření
Minimal number of credits of the block: 44
The role of the block: PZ

Code of the group: 2018_MEEMEPPS4
Name of the group: Compulsory subjects of the specialization
Requirement credits in the group: In this group you have to gain 44 credits
Requirement courses in the group: In this group you have to complete 9 courses
Credits in the group: 44
Note on the group: Specializace Management energetiky a elektrotechniky

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
BE1M16EKL	**Ecology and Economy** *Jaroslav Knápek **Jaroslav Knápek** Jaroslav Knápek (Gar.)*	Z,ZK	5	3P+1S	Z	PZ
BE1M16EKM	**Econometrics and economic applications** *Lubomír Lízal, Šerzod Tašpulatov **Lubomír Lízal** Lubomír Lízal (Gar.)*	Z,ZK	4	2P+2S	L	PZ
BE1M16EVE	**Economics of Power Generation** *Martin Beneš **Martin Beneš** Martin Beneš (Gar.)*	Z,ZK	5	2P+2S	L	PZ
BE1M16FIU	**Financial Accouting** *Josef Černohous **Josef Černohous** Jiří Vašíček (Gar.)*	Z,ZK	5	2P+2S	Z	PZ
BE1M16FIM1	**Financial Management** *Július Bemš, Oldřich Starý **Július Bemš** Oldřich Starý (Gar.)*	Z,ZK	5	2P+2S	L	PZ
BE1M16MES	**Management and Economics of Power Systems** *Tomáš Králík **Tomáš Králík** Tomáš Králík (Gar.)*	Z,ZK	6	2P+2S	Z	PZ
BE1M16MNR	**Managerial Decision Making** *Jaroslav Knápek, Martin Beneš **Jaroslav Knápek** Jaroslav Knápek (Gar.)*	Z,ZK	5	2P+2C	Z	PZ
BE1M16MAR	**Marketing** *Ondřej Pešek **Ondřej Pešek** Ondřej Pešek (Gar.)*	Z,ZK	5	2P+2S	L	PZ
BE1M16OVY	**Operations Research** *Jaroslav Knápek, Martin Dobiáš **Martin Dobiáš** Jaroslav Knápek (Gar.)*	Z,ZK	5	2P+2C	Z,L	PZ

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMEPPS4 Name=Compulsory subjects of the specialization

BE1M16EKL	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.

BE1M16EKM	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

BE1M16EVE	Economics of Power Generation	Z,ZK	5

Power sources overview, energy processes analysis.

BE1M16FIU	Financial Accouting	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.

BE1M16FIM1	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.

BE1M16MES	Management and Economics of Power Systems	Z,ZK	6
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.			
BE1M16MNR	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			
BE1M16MAR	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.			
BE1M16OVY	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).			

Name of the block: Compulsory elective courses
Minimal number of credits of the block: 20
The role of the block: PV

Code of the group: 2018_MEEMEPV2
Name of the group: Compulsory elective subjects of the specialization
Requirement credits in the group: In this group you have to gain at least 15 credits (at most 45)
Requirement courses in the group: In this group you have to complete at least 3 courses (at most 9)
Credits in the group: 15
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
BE1M16CTR1	**Controlling**	Z,ZK	5	2P+2S	Z	PV
BE1M16RES	**Development of Energy Systems**	Z,ZK	5	2P+2S	Z	PV
BE1M16EUE1	**Economy of Energy Use** *Jiří Beranovský, Michaela Valentová* ***Michaela Valentová*** *Jiří Beranovský (Gar.)*	Z,ZK	5	2P+2S	L	PV
BE1M15ETT	**Electrical Heat** *Jan Kyncl Jan Kyncl (Gar.)*	Z,ZK	5	2P+2S	Z	PV
BE1M16ENI	**Environmental Engineering**	Z,ZK	5	2P+2S	Z,L	PV
BE1M16MAS1	**Marketing Strategies** ***Ondřej Pešek***	Z,ZK	5	2P+2S	Z,L	PV
BE1M16DES	**Power Transport Systems**	Z,ZK	5	2P+2S	Z	PV
BE1M16JAK	**Quality management** *Jan Jandera* ***Jan Jandera*** *Jan Jandera (Gar.)*	Z,ZK	5	2P+2S	Z	PV
BE1M16STA	**Statistical methods in economics** *Šerzod Tašpulatov* ***Šerzod Tašpulatov*** *Šerzod Tašpulatov (Gar.)*	Z,ZK	5	2P+2S	L	PV

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMEPV2 Name=Compulsory elective subjects of the specialization

BE1M16CTR1	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.			
BE1M16RES	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.			
BE1M16EUE1	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.			
BE1M15ETT	Electrical Heat	Z,ZK	5
The aim is to gain knowledge of heat transfer, physical similarity theory, mathematical models frequently used components of energy systems (heat exchangers, heat pumps, thermal storage tanks, air treatment equipment). Are discussed mathematical models of induction and arc of electro-thermal equipment.			
BE1M16ENI	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.			

BE1M16MAS1	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.			
BE1M16DES	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.			
BE1M16JAK	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			
BE1M16STA	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.			

Code of the group: 2018_MEEMEH
Name of the group: Humanities subjects
Requirement credits in the group: In this group you have to gain 5 credits
Requirement courses in the group: In this group you have to complete 1 course
Credits in the group: 5
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
BE0M16HSD1	**History of economy and social studies**	Z,ZK	5	2P+2S	Z,L	PV
BE0M16HVT	**History of science and technology 2**	Z,ZK	5	2P+2S	Z,L	PV
BE0M16FIL	**Philosophy 2** *Peter Zamarovský* ***Peter Zamarovský*** *Peter Zamarovský (Gar.)*	Z,ZK	5	2P+2S	Z,L	PV
BE0M16PSM	**Psychology**	Z,ZK	5	2P+2S	Z,L	PV
BE0M16TEO	**Theology**	Z,ZK	4	2P+2S	L	PV

Characteristics of the courses of this group of Study Plan: Code=2018_MEEMEH Name=Humanities subjects

BE0M16HSD1	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.			
BE0M16HVT	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			
BE0M16FIL	Philosophy 2	Z,ZK	5
BE0M16PSM	Psychology	Z,ZK	5
BE0M16TEO	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.			

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

Code of the group: 2018_MEEMEVOL
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 themagister's program (EEM - Electrical Engineering, Power Engineering and Management, EK - Electronics and Communications, 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

List of courses of this pass:

Code	Name of the course	Completion	Credits
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.		
BE0M16FIL	Philosophy 2	Z,ZK	5
BE0M16HSD1	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.		
BE0M16HVT	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		
BE0M16PSM	Psychology	Z,ZK	5
BE0M16TEO	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.		
BE1M13JAS1	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.		
BE1M14SSE	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.		
BE1M15ETT	Electrical Heat	Z,ZK	5
	The aim is to gain knowledge of heat transfer, physical similarity theory, mathematical models frequently used components of energy systems (heat exchangers, heat pumps, thermal storage tanks, air treatment equipment). Are discussed mathematical models of induction and arc of electro-thermal equipment.		
BE1M15IAP	Engineering Applications	Z,ZK	5
	The aim of the course is to get an overview of solving basic mathematical problems occurring in engineering practice using computer algebra systems		
BE1M15PPE1	Elements and Operation of Electrical Power Systems	Z,ZK	5
	The course introduces basic technical principles of electricity transmission and distribution. There are explained parameters of power systems key elements, steady states, transient and failure phenomena, main principles of dimensioning and protecting, power quality and its control and electrical machines characteristics and utilization.		
BE1M16CTR1	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.		
BE1M16DES	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.		
BE1M16EKE1	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.		
BE1M16EKL	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.		
BE1M16EKM	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		
BE1M16ENI	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.		
BE1M16EUE1	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.		
BE1M16EVE	Economics of Power Generation	Z,ZK	5
	Power sources overview, energy processes analysis.		

BE1M16FIM1	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.			
BE1M16FIU	Financial Accouting	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.			
BE1M16JAK	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			
BE1M16MAR	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.			
BE1M16MAS1	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.			
BE1M16MES	Management and Economics of Power Systems	Z,ZK	6
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.			
BE1M16MNR	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			
BE1M16OVY	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).			
BE1M16RES	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.			
BE1M16STA	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.			
BE1MPROJ	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.			

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