

## 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: Department of Economics, Management and Humanities

Branch of study guaranteed by the department:

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: 61

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	<b>Economy of Power Industry</b> Tomáš Králík, Július Bemš <b>Tomáš Králík</b> Tomáš Králík (Gar.)	Z,ZK	5	2P+2S	L	P
BE1M15PPE1	<b>Elements and Operation of Electrical Power Systems</b> Zdeněk Müller, Jan Hlaváček Zdeněk Müller (Gar.)	Z,ZK	5	2P+2S	Z	P
BE1M15IAP	<b>Engineering Applications</b> Jan Kyncl, Ladislav Musil	Z,ZK	5	2P+2C	Z	P
BE1MPROJ	<b>Individual project</b> Jiří Vašíček, Zdeněk Müller, Jan Kyncl, Jan Jandera, Josef Černohous <b>Oldřich Starý</b> Oldřich Starý (Gar.)	Z	5	0p+4s	Z	P
BE1M14SSE	<b>Machinery and Structures of Power Plants</b> Evžen Thöndel <b>Evžen Thöndel</b>	Z,ZK	5	2P+2C	Z	P
BE1M13JAS1	<b>Quality and Reliability</b> Pavel Mach <b>Pavel Mach</b> 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) <i>Tutors, authors and guarantors (gar.)</i>	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.			

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) <i>Tutors, authors and guarantors (gar.)</i>	Completion	Credits	Scope	Semester	Role
BE0M16HSD1	History of economy and social studies	Z,ZK	5	2P+2S	Z,L	P
BE0M16HVT	History of science and technology 2	Z,ZK	5	2P+2S	Z,L	P
BE0M16FIL	Philosophy 2 <i>Peter Zamarovský Peter Zamarovský (Gar.)</i>	Z,ZK	5	2P+2S	Z,L	P
BE0M16PSM	Psychology	Z,ZK	5	2P+2S	Z,L	P
BE0M16TEO	Theology	Z,ZK	4	2P+2S	L	P

**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
The course is oriented on the transdisciplinary aspects of philosophy, informatics, physics, mathematics and biology.			
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 grows our civilization up.			

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	<b>Ecology and Economy</b> Jaroslav Knápek <b>Jaroslav Knápek</b> Jaroslav Knápek (Gar.)	Z,ZK	5	3P+1S	Z	PZ
BE1M16EKM	<b>Econometrics and economic applications</b> Lubomír Lízal, Sherzod Tashpulatov <b>Lubomír Lízal</b> Lubomír Lízal (Gar.)	Z,ZK	4	2P+2S	L	PZ
BE1M16EVE	<b>Economics of Power Generation</b> Martin Beneš <b>Martin Beneš</b> Martin Beneš (Gar.)	Z,ZK	5	2P+2S	L	PZ
BE1M16FIU	<b>Financial Accounting</b> Jiří Vašíček, Josef Černohous <b>Josef Černohous</b> Jiří Vašíček (Gar.)	Z,ZK	5	2P+2S	Z	PZ
BE1M16FIM1	<b>Financial Management</b> Július Bemš, Oldřich Starý <b>Július Bemš</b> Oldřich Starý (Gar.)	Z,ZK	5	2P+2S	L	PZ
BE1M16MES	<b>Management and Economics of Power Systems</b> Tomáš Králík, Jaromír Vastl <b>Tomáš Králík</b> Jaromír Vastl (Gar.)	Z,ZK	6	2P+2S	Z	PZ
BE1M16MNR	<b>Managerial Decision Making</b> Jaroslav Knápek, Martin Beneš <b>Jaroslav Knápek</b> Jaroslav Knápek (Gar.)	Z,ZK	5	2P+2C	Z	PZ
BE1M16MAR	<b>Marketing</b> Jana Polášek Filová, Ondřej Pešek <b>Ondřej Pešek</b> (Gar.)	Z,ZK	5	2P+2S	L	PZ
BE1M16OVY	<b>Operations Research</b> Jaroslav Knápek, Martin Dobiáš <b>Martin Dobiáš</b> 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 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.
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 contraction 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: 15

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	<b>Controlling</b>	Z,ZK	5	2P+2S	Z	PV
BE1M16RES	<b>Development of Energy Systems</b> Rostislav Krejcar <b>Rostislav Krejcar</b> Rostislav Krejcar (Gar.)	Z,ZK	5	2P+2S	Z	PV

BE1M16EUE1	<b>Economy of Energy Use</b> <i>Jiří Beranovský, Michaela Valentová <b>Michaela Valentová</b> Jiří Beranovský (Gar.)</i>	Z,ZK	5	2P+2S	L	PV
BE1M15ETT	<b>Electrical Heat</b> <i>Jan Kyncl Jan Kyncl (Gar.)</i>	Z,ZK	5	2P+2S	Z	PV
BE1M16ENI	<b>Environmental Engineering</b>	Z,ZK	5	2P+2S	Z,L	PV
BE1M16MAS1	<b>Marketing Strategies</b> <i>Ondřej Pešek</i>	Z,ZK	5	2P+2S	Z,L	PV
BE1M16DES	<b>Power Transport Systems</b> <i>Miroslav Vitek <b>Miroslav Vitek</b> Miroslav Vitek (Gar.)</i>	Z,ZK	5	2P+2S	Z	PV
BE1M16JAK	<b>Quality management</b> <i>Jan Jandera <b>Jan Jandera</b> Jan Jandera (Gar.)</i>	Z,ZK	5	2P+2S	Z	PV
BE1M16STA	<b>Statistical methods in economics</b> <i>Sherzod Tashpulatov <b>Sherzod Tashpulatov</b> Sherzod Tashpulatov (Gar.)</i>	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			
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 conveyer 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 indexes number. Aggregative indexes. Variable-structure indexes. Multifactor indexes. Correlation and regression, Basic Concepts. Measurement of dependence intensity. Time series, concepts, qualities. Chronological average. Time series - trends and extrapolation.		

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 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.	Z	25
BE0M16FIL	Philosophy 2 The course is oriented on the transdisciplinary aspects of philosophy, informatics, physics, mathematics and biology.	Z,ZK	5
BE0M16HSD1	History of economy and social studies 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.	Z,ZK	5
BE0M16HVT	History of science and technology 2 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	Z,ZK	5
BE0M16PSM	Psychology	Z,ZK	5
BE0M16TEO	Theology 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 grows our civilization up.	Z,ZK	4
BE1M13JAS1	Quality and Reliability 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.	Z,ZK	6
BE1M14SSE	Machinery and Structures of Power Plants 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.	Z,ZK	5
BE1M15ETT	Electrical Heat 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.	Z,ZK	5
BE1M15IAP	Engineering Applications The aim of the course is to get an overview of solving basic mathematical problems occurring in engineering practice using computer algebra systems	Z,ZK	5
BE1M15PPE1	Elements and Operation of Electrical Power Systems 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.	Z,ZK	5
BE1M16CTR1	Controlling 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.	Z,ZK	5
BE1M16DES	Power Transport Systems 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 conveyer belt transport for solid fuel and mainly grid for electricity (power) transport.	Z,ZK	5
BE1M16EKE1	Economy of Power Industry 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.	Z,ZK	5
BE1M16EKL	Ecology and Economy 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.	Z,ZK	5
BE1M16EKM	Econometrics and economic applications 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	Z,ZK	4
BE1M16ENI	Environmental Engineering	Z,ZK	5
BE1M16EUE1	Economy of Energy Use 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.	Z,ZK	5
BE1M16EVE	Economics of Power Generation Power sources overview, energy processes analysis.	Z,ZK	5
BE1M16FIM1	Financial Management 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.	Z,ZK	5

BE1M16FIU	<b>Financial Accounting</b> 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.	Z,ZK	5
BE1M16JAK	<b>Quality management</b> 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	Z,ZK	5
BE1M16MAR	<b>Marketing</b> 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.	Z,ZK	5
BE1M16MAS1	<b>Marketing Strategies</b> 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.	Z,ZK	5
BE1M16MES	<b>Management and Economics of Power Systems</b> 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.	Z,ZK	6
BE1M16MNR	<b>Managerial Decision Making</b> 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	Z,ZK	5
BE1M16OVY	<b>Operations Research</b> 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).	Z,ZK	5
BE1M16RES	<b>Development of Energy Systems</b> 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.	Z,ZK	5
BE1M16STA	<b>Statistical methods in economics</b> 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 indexes number. Aggregative indexes. Variable-structure indexes. Multifactor indexes . Correlation and regression, Basic Concepts. Measurement of dependence intensity. Time series, concepts, qualities. Chronological average . Time series - trends and extrapolation.	Z,ZK	5
BE1M16PROJ	<b>Individual project</b> 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.	Z	5

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

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