

Subjects in the topic area of Geotechnical Systems and Processes

Code	Subject	Autumn semester	Spring semester	Pre-requisites
	Core subjects			
MFA401	Tunnel Construction	X		
MFA402	Underground Production Systems		X	
MFA403	Geomechanics	X		
MFA404	Surface-Mining Production Systems		X	
MFA405	Basics of Geographic Information Systems (GIS)	X		
	Specialized subjects			
MFA410	Material handling, transport systems, and geotechnical logistics	X		
MFA411	Value estimation and management of mineral resources		X	
MFA412	Automated surface and underground surveying and mapping		X	
MFA413	Natural hazards and safety systems in mining	X		A402
MFA414	Production of building materials	X		A404
MFA415	Testing and classification of building materials	X		
MFA416	Ventilation and air conditioning of underground areas		X	A402
MFA418	Stability and Support of Underground Areas		X	A403
MFA419	Geoinformatic Systems	X		
MFA420	Global Positioning Systems	X		
MFA422	Maintenance and Diagnosis		X	
MFA423	Environmentally Friendly Mining Systems and Reclamation		X	
MFA424	Analysis of Rock Movement and Mine Damage	X		A403
MFA426	Residual Materials Disposal in Mining Areas		X	
MFA427	Measurement and automation		X	
MFA428	Engineering Geodesy and Principles of Measurement in Mining	X		
MFA429	Installation of Raw Material Production and Energy Systems		X	
MFA430	Expert Systems in Mining		X	
MFA431	Transport Equipment	X		
MFA432	Energy supply equipment for water removal and compressed air delivery		X	
MFA433	GIS Expert Systems		X	A405

Subjects in the topic area of Fluid Production and Transport Systems

Code	Subject	Autumn semester	Spring semester	Pre-requisites
	Core subjects			
MFB401	Applied Physical Chemistry	X		
MFB402	Fluid Mechanics	X		
MFB403	Underground Fluid Mechanics	X		
MFB404	Gas Dynamics		X	
MFB405	Heat Transfer	X		
MFB406	Colloid Chemistry		X	
MFB407	Petrophysics	X		
MFB408	Reservoir Fluids		X	
	Specialized subjects			
MFB410	Applied Chemistry for Hydrocarbon Mining	X		B401
MFB411	Material Balance Equations and Their Application		X	B408
MFB412	Selected Topics in Rotary Drilling Technology	X		B402
MFB413	Hazards of Hydrocarbon Transport	X		B433

MFB414	Flowing Wells		X	B402 and B408
MFB415	Consumer Gas Systems		X	
MFB416	Underground Gas Storage			B407
MFB417	Natural Gas Distribution	X		B402
MFB418	Natural Gas Trading		X	
MFB419	Storage and Secure Supply of Natural Gas		X	B416
MFB420	Use of Natural Gas Energy	X		
MFB421	Geothermal Energy Recovery		X	B405
MFB422	Geothermal Energy Generation		X	B405
MFB423	Effective Oil and Gas Recovery Methods	X		B407 and B408
MFB424	Hydrodynamic Well Testing	X		B407 and B408
MFB425	Chemical Methods for Intensive Hydrocarbon Recovery		X	B401
MFB426	Blow-out Prevention		X	B407 and B408
MFB427	Oil Gathering Systems	X		B402 and B408
MFB428	Well Workover		X	B410
MFB429	Nodal Analysis	X		B414
MFB430	Oil Field Production Systems	X		B429
MFB431	Sucker-Rod Pumping		X	B408
MFB432	Gas Lift Production Systems		X	B429
MFB433	Hydrocarbon Transport Systems	X		B402
MFB434	Reservoir Stimulation	X		B407
MFB435	Transport Processes in Special Cases			B402 and B405
MFB436	Generation of Renewable Energy	X		
MFB437	Underground Fluid Mechanics*			
MFB438	Petrophysics*			
MFB439	Reservoir fluids*			
MFB440	The Material-Balance Equations and their Application*			
MFB441	Underground Gas Storage*			
MFB442	Improved Oil and Gas Recovery Methods*			
MFB443	Well Tests*			
MFB444	Combined Energy Recovery of Gas and Renewable Energy		X	
MFB445	Hydrocarbon Transport and System Management			
MFB446	Numerical Reservoir Simulation*			
MFB447	Reservoir Simulation*			
MFB448	Reservoir Engineering Methods*			
MFB449	Fractured Reservoir Engineering*			
MFB450	Reservoir Characterisation and Management*			
MFB451	Design and Operation of Flowing Oil Wells*			
MFB452	Oil Field Gathering Systems*			
MFB453	NODAL Analysis*			
MFB454	Oilfield Production Systems*			
MFB455	Design and Operation of Sucker-Rod Pumped Wells*			
MFB456	Design and Optimisation of Gas Lift Installations*			
MFB457	Design and Operation of ESP Installations*			
MFB458	Design and Operation of Gas Wells*			
MFB459	Novel Artificial Lift Methods*			

* offered in English in the curriculum Subjects in the topic area of Environmental Process Technology and Raw Material Preparation

Code	Subject	Autumn semester	Spring semester	Pre-requisites
	Core subjects			
MFC401	Crushing			

MFC402	Agglomeration			
MFC403	Phase Separation			
MFC404	Multiphase Flow			
MFC405	Blending and homogenization			
MFC406	Reaction engineering			
	Specialized subjects			
MFC410	Basics of Bioprocessing Technology			
MFC411	Simulation Studies Applied to Mechanical Processing Technology			
MFC412	Environmental Chemistry			
MFC413	Material Handling Equipment in Preparation Technology			
MFC414	Description of Disperse Material Systems			
MFC415	Movement of Disperse Material Systems			
MFC416	Measurement and Quality Assurance in Preparation Processes			
MFC417	Machines and Mechanical Systems in Preparation Technology			
MFC418	Preparation Technology for the Construction and Ceramic Industries			
MFC419	Preparation of Waste in the Construction Industry			
MFC420	Preparation of Ore			
MFC421	Preparation of Metal Waste			
MFC422	Hydraulic and Pneumatic Energy Transfer			
MFC423	Waste Management			
MFC424	Composting			
MFC426	Air Cleaning Systems			
MFC427	Basic Phenomena and Micro-processes in Mechanical Process Technology			
MFC428	Preparation of Plastic Waste			
MFC430	Acoustical Measurements in the Operation of Process Technology			
MFC431	Preparation of Coal			
MFC432	Waste Water Treatment			
MFC433	Separation by Physical Chemical Properties			
MFC434	Separation by Physical Properties			
MFC435	Storage and Feeding of Solid Particle Materials and Related Equipment			
MFC436	Preparation of Solid Municipal Waste			
MFC437	Flow Characteristics of Suspensions			
MFC438	Soil Remediation			
MFC439	Thermal Process Technology			

Subjects in the topic area of Research in Applied Geology

Code	Subject	Autumn semester	Spring semester	Pre-requisites
	Core subjects			
MFE401	General and structural geology	X		
MFE402	Mineralogy	X		
MFE403	Geochemistry		X	
MFE404	Hydrogeology		X	
MFE405	Petro-mechanics		X	
MFE406	Petrology	X		
MFE407	Historical Geology	X		
	Specialized subjects			
MFE410	Environmental Applications of Geoinformatics	X		E403, E404
MFE411	Ore Geology		X	E402, E403

MFE412	Geohydrology and Definition of Water Supply	X		E404
MFE413	Waste Disposal		X	E404, E405
MFE414	Petroleum Geology	X		E401, E406
MFE415	Environmental Health and Human Health Risk Analysis		X	E403, E404
MFE416	Environmental Geology		X	E401, E406
MFE417	Environmental Chemistry		X	E403
MFE418	Coal Geology		X	E401, E406
MFE419	Petrophysics		X	E406
MFE420	Geology of Hungary		X	E401, E407
MFE421	Hydrogeology of Hungary	X		E401, E404
MFE422	Engineering Geology	X		E401, E405
MFE423	Geology of Non-metallic Deposits	X		E402, E406
MFE424	Sedimentology		X	E402, E407
MFE425	Colloid Chemistry of Hydrocarbon Genetics	X		E402, E403
MFE426	Reclamation of Polluted Areas		X	E403, E404
MFE427	Seepage Hydraulics	X		E404
MFE428	Soil Chemistry		X	E403, E401
MFE429	Soil Mechanics		X	E405
MFE430	Remote Sensing		X	E401, E406
MFE431	Transport Modelling		X	E401, E404
MFE432	Water Intake and Protection Structures	X		E404
MFE433	Water Prospecting and Management	X		E404
MFE434	Water Quality Protection	X		E403, E404
MFE435	Hydropower Plants	X		E404
MFE436	Water Technology	X		E404
MFE437	Methods of Modern Instrumental Materials Testing			E402
MFE438	Karst Hydrogeology	X		E404
MFE439	Hydrogeology of Geothermal Systems		X	E404

Subjects in the topic area of Physical and Human Geography

Code	Subject	Autumn semester	Spring semester	Pre-requisites
	Core subjects			
MFF401	History of Geographic Studies	X		
MFF402	Basics of Human Geography	X		
MFF403	Basics of Physical Geography	X		
MFF404	Geography of Hungary		X	
MFF405	World Description: Regional Human Geography	X		
	Specialized subjects			
MFF410	Applied Geography		X	F401
MFF411	Biogeography		X	F403
MFF412	Ethnic, Religious and Political Geography	X		F402
MFF413	Geomorphology		X	F403
MFF414	Environmental Geography	X		F402, F403
MFF416	Research Methods in Human Geography	X		F401, F402
MFF417	World Description: Soil Science		X	F405