

Lang	Course name	Neptun code	Institute	Webpage	Teacher	Email	Level	Cred	Semester	Parameter	Short description
EN	Embedded Systems	GEVAU519B-A	Automation and Com	http://geik.uni-miskolc.hu	Dr. József Vászárhelyi	vajo@uni-miskolc.hu	Bachelor	5	both	2e/2g/gy	Embedded Systems overview Example Embedded Systems and their Requirements Processor technologies and IC technologies Design technologies Processors (custom single purpose general purpose and standard single purpose) Memory Interfacing Soft processors and hard processors (PicoBlaze MicroBlaze PowerPC ARM) Peripherals Embedded all programmable SOC Design Flow Embedded Development Kit Software debugging Event handlers timers System on a Chip Architecture and Code Structure A code walk through Board evaluation in hardware.
EN	Programmable Logic	GEVAU518B-A	Automation and Com	http://geik.uni-miskolc.hu	Dr. József Vászárhelyi	vajo@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	Digital Circuit technologies and programmable logic technologies Characteristics of Programmable Logic Devices (PLD), Application Specific Integrated Circuits (ASIC) ASIC versus PLD, Simple programmable Logic Devices (SPLD) Complex Programmable Logic Devices (CPLD) Field Programmable Gate Arrays (FPGA) architectures, Application of FPGA, System on Chip architectures, Hardware Description Languages. VHDL Verilog and High level synthesis. Open CL basics.
EN	Engineering Thermodynamics	GEAHT211-B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Péter Bencs	peter.bencs@uni-miskolc.hu	Bachelor	3	autumn	2e/1g/k	The objective of this course is to introduce the basic principles of thermodynamics via real-world engineering examples, to show students how thermodynamics is applied in engineering practice.
EN	Fluid Mechanics	GEAHT103B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Norbert Szaszak	norbert.szaszak@uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	General properties of fluids. Viscosity, surface tension, capillarity. Fluid statics. Pressure variation in static fluids. Equilibrium of moving fluids. Hydrostatics: thrust on submerged plane and curved surfaces. Equation of motion, conservation of mass, Bernoulli equation, its applications. Momentum theorem. Energy equation. Navier-Stokes equations. Laminar and turbulent flow in pipes. Friction losses in pipes minor losses.
EN	Renewable Energy	GEAHT013-Ba	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Péter Bencs	peter.bencs@uni-miskolc.hu	Bachelor	4	autumn	2e/1g/k	Renewable energy basics, introduction. Sub-types of water turbines, small sample measurement. Sub-types of hydroelectric power plants. Energy diagram, pipeline blocking. Heat pump. Geothermal energy geothermal energy. Wind turbines operation, determining their performance. The theory of water decomposition. A basics of thermal radiation. Solar radiation theory of solar radiation, absolute black body, grey body radiation. The solar collector construction, application. Biomass.
EN	Pressure System Protection	GEVGT002B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Zoltán Siménfalvi	zoltan.simenfalvi@uni-miskolc.hu	Bachelor	4	spring	2e/2g/k	Pressure systems protection against excessive pressure. Source of pressure gas vapour and dust explosion. Pressure increasing characteristics. Methods of overpressure protection. Safety valves and bursting
EN	Pressure Vessel Design	GEVGT001B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Zoltán Siménfalvi	zoltan.simenfalvi@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/k	Parts of pressure vessels. Base of the pressure vessel design. PED directives. Pressure thermal and secondary loads. Construction materials and selection. Design of unfired pressure vessels (EN 13445).
EN	Unit Operation I.	GEVGT003B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Zoltán Szamosi	zoltan.szamosi@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/k	Definitions and principles dimension analysis hydrostatics hydro dynamics flow of compressible and incompressible fluids transporting of fluids pumps pipes valves block flow diagrams process flow diagrams and P and ID hidrodynamical and mechanical unit operation heat transfer and its equipments mass transfer equipments of the mass transfer
EN	Unit Operation II.	GEVGT004B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Dr. Gábor Szepesi	gabor.szepesi@uni-miskolc.hu	Bachelor	4	spring	2e/2g/k	Basics of heat transfer. The heat conductivity in steady and transient state. Solve heat conduction equation with numerical methods (FDM, FVM). Basics of Heat transfer. Basics of heat exchanger design (shell-tube hxc, FPE hxc). Basic of mass transfer. (Equation of state). Vapour-fluid equilibrium. Binary-distillation McCabe-Thiele method. Distillation in packed column. HETP, NTU, HTU method.
EN	Analysis of Engineering Structures	GEVGT602B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Prof. Dr. Károly Jármái	karoly.jarmai@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	Residual welding stresses and distortions. Stability calculations: local, overall stability, lateral-torsional buckling. The effect of steel grade on the stability. Fatigue design of welded steel and aluminium structures. Vibration control calculation and measurements. Sandwich structures. Stiffened plates, planar and space trusses, silos, frames.
EN	Design of Structural Connections	GEVGT601B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Prof. Dr. Károly Jármái	karoly.jarmai@uni-miskolc.hu	Bachelor	3	spring	2e/1g/k	Static and fatigue analysis of welded connections. Residual welding stresses calculation and measurement. Methods of reducing distortion. Bolted and riveted connections. Glued connections. Frame, beam-to-column design. Cost calculations. Applications.
EN	Publication and Modern Search of the Literature	GEVGT606B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Prof. Dr. Károly Jármái	karoly.jarmai@uni-miskolc.hu	Bachelor	3	both	2e/1g/gy	Search engines for finding the technical documents. Web of Science, Scopus, Scholar Google, ScienceDirect, SpringerLink, Microsoft Academic Search, Cambridge Scientific Abstracts, etc. How to write good technical documents.
EN	Optimization of Engineering Structures	GEVGT603B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Prof. Dr. Károly Jármái	karoly.jarmai@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	Optimisation methods single and multi-objective optimisation. Cost calculations. Application for welded steel structures: stiffened plates, planar and space trusses, silos, frames, tanks, pressure vessels.
EN	Optimization of Objects and Systems	GEVGT604B-a	Energy Engineering an	http://geik.uni-miskolc.hu	Prof. Dr. Károly Jármái	karoly.jarmai@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	Single and multi-objective optimisation methods. Metaheuristic optimisation. Comparison of the different algorithms. Applications for object design and for systems design like energy, logistics, heat exchange, etc.
EN	Life Cycle Assessment (LCA)	GEVGTLCa-a	Higher Education Industrial Cooperation		Dr. Viktória Mannheim	viktoria.mannheim@uni-miskolc.hu	Bachelor	4	spring	2e/2g/k	The role of life cycle assessment in environmental management. Phases of LCA. Writing input-output scales for technological processes. Life Cycle Inventory (LCI) analysis. Life Cycle Impact Assessment (LCIA) methods. Design of innovative environmental technologies with GaBi software. Normalization and weighting methods. Environmental economics study and evaluation of technological processes. Product life cycle analysis. Life Cycle Thinking (LCT), Life Cycle Management (LCM), Holistic decision making, Environmental LCA (E-LCA), Life Cycle Costing (LCC), and Life Cycle Sustainability Assessment (LCSA).
EN	Academic Text Edition with LaTeX	GEIAL010B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Erika Baksáné Varga	erika.b.varga@uni-miskolc.hu	Bachelor	5	autumn	2e/2g/k	LaTeX is a free document preparation system for high-quality typesetting. It is most often used for medium-to-large technical or scientific documents but it can also be used for almost any form of publishing. Hence the course aims to support students in editing and styling their academic proposals. This is a project-based course therefore it is recommended as a supplementary course to thesis preparation or to other courses where longer proposals need to be created.
EN	Basics of Programming (ANSI C)	GEIAL005B-a	Information Science	http://geik.uni-miskolc.hu	György Wágner	wagner@iit.uni-miskolc.hu	Bachelor	5	autumn	2e/2g/k	Program structure. Program control. Assignment logical compare. Functions variables prototyping. Defines macros. String and arrays. Pointers. Standard Input/Output. File Input/Output. Structures. Dynamic memory allocation. Character and bit manipulation. Standard functions. Developing large programs. Unix and C.
EN	Database Systems	GEIAL006B-a	Information Science	http://geik.uni-miskolc.hu	Prof. Dr. László Kovács	kovacs@iit.uni-miskolc.hu	Bachelor	5	autumn	2e/2g/k	Basic concepts of data management and of database systems. Internal structure of database management systems. Data models. Semantic data models ER modelling. Relational data models. Relational algebra and calculus. SQL language. Database design. Functional dependency. Normalization and normal forms. JDBC and ADO SQL languages Basics of PL/SQL programming.
EN	Intelligent Vehicles	GEIAK134B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Samad Davdandipour	samad.davdandipour@uni-miskolc.hu	Bachelor	5	both	3e/1g/k	which in turns are based on integration of electro-mechanical systems with micro-processors. In simple words intelligent vehicles are the integration of vehicle technology mechanics with electronics and conventional digital computer. The fundamentals of Artificial Neural Network (ANN) covers mainly the structural levels of organization in the brain models of a neuron neural networks viewed as directed
EN	Introduction to Neural Network	GEIAK132B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Samad Davdandipour	samad.davdandipour@uni-miskolc.hu	Bachelor	5	both	3e/1g/k	and websites. Classic literature in Technical Science mainly focuses on the comprehensive learning of materials needed to set up students language skills and ability in classic engineering sciences. The lessons
EN	Introduction to Technical English	GEIAK209B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Samad Davdandipour	samad.davdandipour@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	Interfaces versus abstract classes. Class diagram of UML. Virtual methods and its usage. Suggestion and conventions.
EN	Object Oriented Programming	GEIAL012B-A	Information Science	http://geik.uni-miskolc.hu	Dr. Erika Baksáné Varga	erika.b.varga@uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	bounding box collision detection lightning and shadows etc) are presented. This integrated knowledge helps students to create graphics oriented applications and computer games.
EN	Programming of Graphics	GEIAL015B-A	Information Science	http://geik.uni-miskolc.hu	Dr. Péter Mileff	mileff@iit.uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	perform security tasks. Protection from physical damage unauthorized access. Data loss, intruders, attack against security systems, advice from DEC, source of dangerous risks threats costs,
EN	Security of Computer Systems	GEIAL014B-a	Information Science	http://geik.uni-miskolc.hu	György Wágner	wagner@iit.uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	such as HTML, CSS, JavaScript, AJAX, JQuery, JSON.
EN	WEB Technologies – Theory and Current Practice	GEIAL331B-a	Information Science	http://geik.uni-miskolc.hu	Anita Agárdi	anita.agardi@uni-miskolc.hu	Bachelor	5	autumn	2e/2g/k	Management of customer orders. Preparation of price offers. Generation and release of internal orders. Making a delivery note. Generate invoice. Case study and software demonstration: use of prodHost
EN	Enterprise Resource Planning	GEIAK123B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Mónika Kulcsárné Földes	monika.kulcsar@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	shop, job shop, open shop, and general shop scheduling. Disjunctive graph model. Scheduling resources with limited availability in time. The role of simulation. Multi-objective optimization. Search
EN	Scheduling Models and Algorithms	GEIAK153B-a	Information Science	http://geik.uni-miskolc.hu	Dr. Kulcsár Gyula	gyula.kulcsar@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	Funktionen der Beschaffung. Rolle der Beschaffung in der Unternehmenslogistik. Systeme und Strategien der Beschaffung. Beschaffung und Distribution aus dem Aspekt von Produktion.
DE	Beschaffung- und Distributionslogistik	GEALTO46B-n	Logistics	http://geik.uni-miskolc.hu	Prof. Dr. Béla Illés	bela.illes@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	Operation characteristics and problems of material handling machines. Design of material handling systems. Dynamic phenomenon simulation and computer aided solutions in the design process.
EN	Computer Design of Material Handling Equipment	GEALTO003B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Péter Telek	peter.telek@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	Design conceptions. Palettisation. Facility allocation planning. Unit loads. Transportation. IT and logistics. Enterprise resource planning. E-commerce. MRP.
EN	Design of Material Flow Systems	GEALTO01B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Tamás Banyai	tamas.banyai@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	development of material flow systems on the basis of LEAN philosophy.
EN	LEAN Logistics	GEALTO62B-A	Logistics	http://geik.uni-miskolc.hu	Dr. Péter Tamás	tamas.peter@uni-miskolc.hu	Bachelor	4	autumn	2e/0g/k	logistics: warehousing transportation. Material flow systems: belt conveyors roller conveyors overhead conveyors trolley conveyors trucks cranes,
EN	Logistics	GEALTO45B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Róbert Skapinyecz	robert.skapinyecz@uni-miskolc.hu	Bachelor	3	autumn	2e/1g/k	these methods their interrelations and the relevant mathematical tools are also explained.
EN	Logistics and Quality Management	GEALTO08B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Róbert Skapinyecz	robert.skapinyecz@uni-miskolc.hu	Bachelor	3	spring	2e/1g/k	Logistik in der Produktion und Dienstleistung. Just in Time. Problemen von „Make or buy. Integrierte Logistik. CIL. Logistik der virtuellen Unternehmen.
DE	Logistik	GEALTO45B-n	Logistics	http://geik.uni-miskolc.hu	Ágota Dr. Banyainé Dr. Telek	agota.banyaine@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	Verknüpfung zu ganzheitlichen Strategien Rechnung getragen.
DE	Logistik und Qualitätsmanagement	GEALTO08B-n	Logistics	http://geik.uni-miskolc.hu	Prof. Dr. Béla Illés	bela.illes@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	Planungskonzeptionen. Ladeeinheitsbildung. Layoutplanung. Transportsystemen. Logistik und Informatik. PPS. E-commerce. MRP
DE	Planung von Materialflusssystemen	GEALTO001B-n	Logistics	http://geik.uni-miskolc.hu	Dr. Tamás Banyai	tamas.banyai@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	packaging systems in distribution. First mile and last mile solutions.
EN	Purchasing and Distribution Logistics	GEALTO46B-a	Logistics	http://geik.uni-miskolc.hu	Ágota Dr. Banyainé Dr. Telek	agota.banyaine@uni-miskolc.hu	Bachelor	3	spring	2e/1g/k	of implementing simulation testing. Modeling of material flow systems. Description of process development methods for material flow systems. Case studies.
EN	Simulation of Material Flow Systems	GEALTO61B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Péter Tamás	tamas.peter@uni-miskolc.hu	Bachelor	4	spring	2e/1g/gy	„horror stories“, presentation of success stories. Optimization, classification of methods, evolutionary optimization. Practical demonstration and model experiments for multidisciplinary analysis and
EN	Acoustics and Noise Protection	GEGET009B-a	Machine and Product	http://geik.uni-miskolc.hu	Dr. Károly Jálics	karoly.jalics@uni-miskolc.hu	Bachelor	4	spring	2e/1g/k	velocity. Motion-diagrams. Working losses efficiency and power of machines. Fluid flow. Potential energy of gas and steam. Drives. Transportation facilities for solids fluids and gases. Engines: steam and gas
EN	Finite Element Analysis of Machine Elements	GEGET007B-a	Machine and Product	http://geik.uni-miskolc.hu	Dr. Ferenc János Szabó	ferenc.szabo@uni-miskolc.hu	Bachelor	3	spring	1e/2g/gy	mechanical and electrical engineers on the 110-year history of the Ganz factory. Presentation of significant turning points in technical development from both a technological and a historical point of view.
EN	Fundamentals of Machine Elements	GEGET001B-a	Machine and Product	http://geik.uni-miskolc.hu	Gabriella Vadászné Prof. Bogárné	gabriella.v.bognar@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	and rolling-element bearings. Seals. Brakes. Pipelines and pipe fittings. Flexible machine elements (flat belt V-belt toothed belt chain and friction drives). Slider-crank mechanisms. Flywheel sizing.
EN	History of Technics	GEGET300B-A	Machine and Product	http://geik.uni-miskolc.hu	Dr. Ferenc Sarka	ferenc.sarka@uni-miskolc.hu	Bachelor	2	autumn	2e/0g/k	elements. Design of gear pairs and gear drives. Manufacturing methods of gears. Helical gear pairs, bevel gear pairs. Overview of worm gear drives, epicyclic traction drives and epicyclic gear drives, harmonic
EN	Machine Elements I.	GEGET003B-A	Machine and Product	http://geik.uni-miskolc.hu	Géza Németh	geza.nemeth@uni-miskolc.hu	Bachelor	5	both	2e/3g/k	Oberflächenzüge. Technologische Vorschriften auf Werkzeugzeichnungen. Regeln der Zeichnung von normgerechter Zeichnungen. Werkstücks- und Werkstatzeichnungen. Zeichnung von geschweißten gegossenen
EN	Machine Elements II.	GEGET004B-A	Machine and Product	http://geik.uni-miskolc.hu	Dr. Károly Jálics	karoly.jalics@uni-miskolc.hu	Bachelor	4	spring	2e/2g/k	
DE	Maschinenzeichnung	GEGET002B-n	Machine and Product	http://geik.uni-miskolc.hu	Dr. János Bihari	janos.bihari@uni-miskolc.hu	Bachelor	3	spring	2e/2g/k	

EN	Mechanical Drawing	GEGET002B-A	Machine and Product	http://geik.uni-miskolc.hu	Zsuzsa Drágár	zsuzsa.dragar@uni-miskolc.hu	Bachelor	3	both	2e/2g/k	Surface roughness. Technological instructions on working drawing. Drawing rules for standard machine elements. Detail and assembly drawings. Drawing of the casted forged rolled welded and machine-cut
EN	Environmentally-friendly design	GEGET005-Ba	Machine and Product	http://geik.uni-miskolc.hu	Dr. Ágnes Takács	agnes.takacs@uni-miskolc.hu	Bachelor	4	spring	2e/2g/k	Introduction to the DfE. Rules, strategies of the design for the environment. Learning the elements of environmentally friendly design.
EN	Design methodology	GEGET050-Ba	Machine and Product	http://geik.uni-miskolc.hu	Dr. Ágnes Takács	agnes.takacs@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/gy	Introduction to the design methodology. Steps of the design process. What we should do in the different stages of design. Design schools.
EN	Lubrication and Sealing	GEGET015-Ba	Machine and Product	http://geik.uni-miskolc.hu	Géza Németh	geza.nemeth@uni-miskolc.hu	Bachelor	4	both	2e/2g/gy	sealing systems.
EN	Special Drives	GEGET505-Ba	Machine and Product	http://geik.uni-miskolc.hu	Géza Németh	geza.nemeth@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	traction drives. Applications at the area of space technology and robotics. Lubrication - traction fluids and greases.
EN	CAD design and Simulation of Machine	GESGT001B-a	Machine Tools and Methods	http://geik.uni-miskolc.hu	Dr. György Hegedűs, Kiss	hegedus.gyorgy@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	of assembly models including vibrational structural and thermal influences.
EN	Mechatronic Systems	GEMRB004B-a	Machine Tools and Methods	http://geik.uni-miskolc.hu	Dr. László Rónai, József	laszlo.ronai@uni-miskolc.hu	Bachelor	4	both	2e/2g/gy	function of a system. Designing steps of the pole placement method. Introduction to PLC programming with the use of Rexroth modular PLC, IndraWorks and IndraLogic softwares. Programming of simple,
EN	Modelling, Simulation	GEMRB010B-a	Machine Tools and Methods	http://geik.uni-miskolc.hu	Dr. László Rónai	laszlo.ronai@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	schemes. The elements of a block diagram. Methods of Numerical integration: Euler method, Trapezoid method. Displaying results and their discussion. Investigation of electrical, mechanical and mixed
EN	Fundamentals of Production Engineering	GEGTT100B-a	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. István Sztankovics	istvan.sztankovics@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	machining operations. The properties and application area of the used cutting materials. The wear and tool life of cutting tools. Mechanics of metal cutting. The characteristic parameters of the chip. Overview
EN	Planning of Production and Production	GEGTT125B-a	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. Csaba Felhő	csaba.felho@uni-miskolc.hu	Bachelor	3	spring	2e/1g/k	traditional machining methods (abrasive waterjet cutting, electrodischarge machining, laser- and plasma cutting, ultrasonic machining, chemical machining, additive manufacturing). Basics of production
EN	Quality inspection	GEGTT120-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. Viktor Molnár	viktor.molnar@uni-miskolc.hu	Bachelor	3	autumn	2e/1g/k	techniques and methods. Machine and process capability analysis. Analysis of measurement tools. Basics of statistical process control. Quality inspection of production parts. Control plan. Case studies for
EN	Production systems	GEGTT460-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. György Kovács	gyorgy.kovacs@uni-miskolc.hu	Bachelor	4	both	2e/1g/k	philosophies (JIT, Kanban, Lean). Characteristics and main activities of production systems and processes. General types and characteristics of intermittent and continuous production processes: project
EN	Efficiency improvement of manufacturing	GEGTT462-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. György Kovács	gyorgy.kovacs@uni-miskolc.hu	Bachelor	3	both	2e/1g/gy	batch production, mass production and process production. Performance measurement of production processes, most often used Key Performance Indicators (KPI). Main aims of the efficiency improvement
EN	Quality control	GEGTT122-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. Viktor Molnár	viktor.molnar@uni-miskolc.hu	Bachelor	4	spring	2e/2g/gy	control tools and methods. Problem solving methods and systems, visualisation techniques, PDCA-cycle. The six sigma (mathematical basics, calculations, components) and the DMAIC cycle. Continuous
EN	Precision machining	GEGTT148-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. Viktor Molnár	viktor.molnar@uni-miskolc.hu	Bachelor	4	spring	2e/2g/gy	procedures and technologies. Surface integrity, roughness, residual stress. Nanomanufacturing. Sensor-assisted machining.
EN	Machine Industrial Assembly	GEGTT112-Ba	Manufacturing Science	http://geik.uni-miskolc.hu	Dr. István Sztankovics	istvan.sztankovics@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	design of the assembly. Planning levels, sub-tasks. Hierarchy of parts, family tree. Analysis of technological correctness, assembly correct construction. Technological characteristics of joint methods. Assembly
EN	Heat Treatment and Welding	GEMTT004-B-a	Materials Science and Engineering	http://geik.uni-miskolc.hu	Raghawendra P. S. Sisod	raghawendra.sisodia@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/k	Thermo-chemical treating. Heat treating shop. Quality management. Thermal joining processes: soldering, brazing and welding. Thermal cutting. Fusion welding. Most important arc welding processes.
EN	Mechanical Technologies	GEMTT032-Ba	Materials Science and Engineering	http://geik.uni-miskolc.hu	Dr. László Kuzsella	laszlo.kuzsella@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	hardening. Toughening. Surface heat treating. Casting and powder metallurgy as a fundamental shaping process. Fundamentals of joining. Theoretical bases of welding. Metal forming is a primary
EN	Complex functions	GEMAN003B-a	Mathematics	http://geik.uni-miskolc.hu	Dr. Krisztián Hriczó	krisztian.hriczo@uni-miskolc.hu	Bachelor	3	spring	2e/0g/k	residue theorem. The unilateral Laplace-transforms and its properties. Evaluations of inverse transforms. Applications.
EN	Data Structures and Algorithms	GEMAK004B-a	Mathematics	http://geik.uni-miskolc.hu	Dr. Attila Házy	attila.hazy@uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	analysis. Advanced data structures and implementation. Data compression.
EN	Descriptive Geometry	GEAGT002B-a	Mathematics	http://geik.uni-miskolc.hu	Dr. József Turi	jozsef.turi@uni-miskolc.hu	Bachelor	3	both	3e/0g/k	lines and planes. Revolution of planes. Auxiliary projections. Metric problems: distance and angle of space elements. Representation of pyramid and prism their intersection with line and plane development.
EN	Differential Equations	GEMAN001B-a	Mathematics	http://geik.uni-miskolc.hu	Dr. Péter Varga	petervarga@uni-miskolc.hu	Bachelor	2	both	2e/0g/k	Variation of parameters. Euler equation. System of linear differential equations. Second order linear differential equations: Homogeneous and non-homogeneous linear equations Euler-Cauchy equations.
EN	Mathematics for Economic Analysis I.	GEMAN101BA	Mathematics	http://geik.uni-miskolc.hu	Dr. Péter Varga	petervarga@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/gy	probability. Random variables. Distributions.,
EN	Operation Research	GEMAK001B-a	Mathematics	http://geik.uni-miskolc.hu	Dr. Attila Korei	attila.korei@uni-miskolc.hu	Bachelor	2	autumn	4e/0g/k	problem and its solution by the Hungarian method. Special integer programming problems.
EN	Geometric design	GEAGT106B-a	Mathematics	http://geik.uni-miskolc.hu	Óváriné Dr. habil. Balajti	zsuzsanna.ovarine.balajti@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	students how to apply the descriptive geometry in engineering design. The Monge representation of the point, line, plane and their incidences (intersections). Parallelism and perpendicularity. Special views
EN	Industrial applications of statistical methods	GEMAK133-Ba	Mathematics	http://geik.uni-miskolc.hu	Dr. József Turi	jozsef.turi@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	In statistical quality control, the CUSUM (or cumulative sum control chart) is a sequential analysis technique in industry. It is typically used for monitoring change detection
EN	Mathematics for Analysis I.	GEMAN114-Ba	Mathematics	http://geik.uni-miskolc.hu	Dr. Krisztián Hriczó	krisztian.hriczo@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	analysis, indefinite integral calculus, integration rules. The definite integral and its applications, improper integral.
EN	Mathematics for Analysis II.	GEMAN124-Ba	Mathematics	http://geik.uni-miskolc.hu	Dr. Krisztián Hriczó	krisztian.hriczo@uni-miskolc.hu	Bachelor	5	both	2e/2g/gy	scalar functions. Scalar vector functions. Vector vector functions.
EN	Neural networks and its applications	GEMAK135-Ba	Mathematics	http://geik.uni-miskolc.hu	Dr. József Turi	jozsef.turi@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	called this model threshold logic. The model paved the way for neural network research to split into two distinct approaches. One approach focused on biological processes in the brain and the other focused
EN	Time series analysis and its applications	GEMAK137-Ba	Mathematics	http://geik.uni-miskolc.hu	Dr. József Turi	jozsef.turi@uni-miskolc.hu	Bachelor	5	both	2e/2g/k	the help of time series.
EN	Dynamics	GEMET003B-a	Mechanics	http://geik.uni-miskolc.hu	Dr. Balázs Tóth	balazs.toth@uni-miskolc.hu	Bachelor	5	spring	3e/2g/k	and its dynamical characteristics. Tensor of inertia. Vector systems in dynamics: vector system of momenta. The equivalent vector system: the linear momentum and angular momentum. The kinetic vector
EN	Finite Element Method	GEMET014B-a	Mechanics	http://geik.uni-miskolc.hu	Dr. Balázs Tóth	balazs.toth@uni-miskolc.hu	Bachelor	4	autumn	2e/2g/k	vectors). The construction and characteristics of the system of linear equations. The problems of modelling: substructure technique the treatment of prescribed displacements eccentric links oblique support
EN	Mechanics of Materials	GEMET002B-a	Mechanics	http://geik.uni-miskolc.hu	Dr. Balázs Tóth	balazs.toth@uni-miskolc.hu	Bachelor	5	autumn	3e/2g/k	generalized Hooke's law, statically indeterminate problems. Torsion: deformations and stresses in circular shafts. Pure bending; Symmetric and unsymmetric bending, bending of members made of several
EN	Statics	GEMET001B-a	Mechanics	http://geik.uni-miskolc.hu	Dr. László Kiss	laszlo.kiss@uni-miskolc.hu	Bachelor	5	spring	2e/2g/k	systems of forces. Classification of force systems. Special systems of forces (concurrent parallel and in plane). Distributed systems of forces. Scalar systems. First moments of lines areas and volumes.
EN	Electrodynamics and Optics	GEFIT252B-a	Physics and Electronic	http://geik.uni-miskolc.hu	Dr. Gábor Pszota	gabor.pszota@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	magnetic field intensity vectors. The Biot-Savart law. Amperes law. The induction phenomena. Faradays law of induction. Gauss law for magnetism. LC oscillations. Alternating currents. The serial RLC circuit.
EN	Mechanics and Thermodynamics	GEFIT251B-a	Physics and Electronic	http://geik.uni-miskolc.hu	Dr. Gábor Pszota	gabor.pszota@uni-miskolc.hu	Bachelor	3	both	2e/1g/k	oscillations. Simple harmonic oscillation damped oscillation forced oscillation and resonance. Basic concepts of thermodynamics macroscopic and microscopic description. Thermal equilibrium. Thermal
EN	Electrical engineering	GEVEE303B-a	Physics and Electronic	http://geik.uni-miskolc.hu	Somogyiné Dr. Molnár Judit	judit.somogyine@uni-miskolc.hu	Bachelor	4	both	2e/2g/k	elements, basic laws, methods, network simplifications. Powers. Materials in magnetic field. Magnetic induction. Electromagnetic fields. Inductance, capacitor. Balanced and unbalanced three-phase systems.
EN	Mechatronics in material flow	GEALT180M-a	Logistics	http://geik.uni-miskolc.hu	Dr. Ákos Cservenák	akos.cservenak@uni-miskolc.hu	Bachelor	3	both	2e/1g/gy	techniques.
EN	Automated material handling	GEALT026B-a	Logistics	http://geik.uni-miskolc.hu	Dr. Ákos Cservenák	akos.cservenak@uni-miskolc.hu	Bachelor	3	both	1e/2g/gy	Components.