

Faculty of Mechanical Engineering

IMPORTANT NOTES

If for one subject you can find several different types (lecture, practice, laboratory) of courses then please choose one and only one course from each type in order to be able to perform the subject's requirements successfully. Civil Engineering courses are on the website separately. Courses chosen from the offer of Faculty of Civil Engineering will be checked and arranged individually by the departmental coordinator.

Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTA4SD	BSc Final Project			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	A-2022o-G	English			
http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATA4SD https://gpk.bme.hu/en/content/42					
Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTA4SZ	Summer Internship (BSc)			Signature	0
Course type	Course code	Course language	Timetable information		
Practice	A-2022o-G	English			
Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTBG11	Fluid Mechanics			Mid-semester mark	6
Course type	Course code	Course language	Timetable information		
Laboratory	A-2022o-L1prs	English			
Laboratory	A-2022o-L2prs	English			
Lecture	A-2022o-E	English			
Practice	A-2022o-G1	English			
Practice	A-2022o-G2	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TBG11#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATBG11 https://gpk.bme.hu/en/content/42#160 ;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTBKSD	Final Project			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	A-2022o-G	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TBKSD http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATBKSD https://gpk.bme.hu/en/content/42#160 ;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTBKSZ	Summer Internship			Signature	0
Course type	Course code	Course language	Timetable information		
Practice	A-2022o-G	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TBKSZ#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATBKSZ #160 ;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEÁTNKDA	Master Thesis Project A			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	A-2022o-G	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNKDA#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNKDA #160 ;					

Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNKDB	Master Thesis Project B		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	A-2022o-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNKDB#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNKDB https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNKPR	Teamwork Project		Mid-semester mark	6
Course type	Course code	Course language	Timetable information	
Laboratory	A-2022o-L	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNKPR#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNKPR https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNKSG	Internship M		Signature	0
Course type	Course code	Course language	Timetable information	
Practice	A-2022o-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNKSG#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNKSG https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNW02	Computational Fluid Dynamics		Mid-semester mark	5
Course type	Course code	Course language	Timetable information	
Lecture	A-2022o-E	English	MON:14:15-16:00(KF82)	
Practice	A-2022o-G4	English	THU:12:15-14:00(AE_CFDLAB)	
Practice	A-2022o-G2	English	THU:08:15-10:00(AE_CFDLAB)	
Practice	A-2022o-G3	English	THU:10:15-12:00(AE_CFDLAB)	
Practice	A-2022o-G1	English	WED:12:15-14:00(AE_CFDLAB)	
Practice	A-2022o-G5	English	THU:16:15-18:00(AE_CFDLAB)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNW02 http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNW02 https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNW08	Building and Environmental Aerodynamics		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	A-2022o-Lprs	English	WED:10:15-12:00(AE_NAGYLAB)	
Lecture	A-2022o-E	English	WED:08:15-10:00(AE_MERLEG-T)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNW08 http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNW08 https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNW10	Advanced Technical Acoustics and Measurement Techniques		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	A-2022o-Lprs	English	THU:12:15-14:00(AE_NAGYLAB)	
Lecture	A-2022o-E	English	MON:10:15-12:00(AE_MERLEG-T)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNW10 http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNW10 https://gpk.bme.hu/en/content/42#160;#160 ;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTNW19	Vehicle Aerodynamics		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	A-2022o-L	English	WED:16:15-18:00(AE_NAGYLAB)	
Lecture	A-2022o-E	English	WED:14:15-16:00(AE_MERLEG-T)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%81TNW19#160 ; http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATNW19 https://gpk.bme.hu/en/content/42#160;#160 ;				

#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÁTOF01	Individual Project		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	A-2022o-L	English		
Subject code	Subject name		Requirement	ECTS credit
BMEGEÉEBG51	Transfer processes		Exam	4
Course type	Course code	Course language	Timetable information	
Laboratory	A37	English	TUE:14:15-17:00	
Lecture	A1	English	WED:13:15-15:00(D102)	
Practice	A2	English	WED:15:15-16:00(D102)	
URL: https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGE%C3%89EBG51				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBGEB	Energy Processes and Equipment		Mid-semester mark	5
Course type	Course code	Course language	Timetable information	
Laboratory	23-1-ENG-LAB	English		
Lecture	23-1-ENG-E	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBGEB#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBGEK	Energy and Environmental Measurements		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	23-1-ENG-LAB	English		
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBGEK#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBGHG	Heat Engines G		Exam	4
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English	TUE:08:15-10:00(D224)	
Practice	23-1-ENG-G2	English	TUE:10:15-12:00(R512)	
Practice	23-1-ENG-G1	English	TUE:10:15-12:00(R512)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBGEK##160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBGTD	Engineering Thermodynamics G		Mid-semester mark	4
Course type	Course code	Course language	Timetable information	
Lecture	23-1-DEU-E	German		
Lecture	23-1-ENG-E	English	TUE:10:15-12:00(D224)	
Practice	23-1-DEU-G	German		
Practice	23-1-ENG-G	English	TUE:12:15-14:00(D224)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBGTD#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBKSD	Final project		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBKSD#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENBMHO	Thermal engineering		Mid-semester mark	4
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English		

Practice	23-1-ENG-G	English	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENBMHO#160;			
Subject code	Subject name		Requirement ECTS credit
BMEGEENMLCA	LCA of Power Generation Systems		Mid-semester mark 4
Course type	Course code	Course language	Timetable information
Laboratory	23-1-ENG-LAB	English	
Lecture	23-1-ENG-E	English	
<p>AimThe course aims to study the environmental impact of energy production systems. Students learn the basic concepts, standards, most commonly used types and areas of application of life cycle assessment (LCA). In their semester project assignment, students determine the environmental impact of an energy system of their choice using life cycle assessment methodology. Within the framework of their project task, they learn to use the software required for modern life cycle analysis (e.g. openLCA, GaBi, EASETECH). Learning outcomesCompetences that can be acquired by completing the course KnowledgeThe student is aware of the principles and importance of a life cycle approach. Knows the basic concepts of life cycle assessment (LCA), the most commonly used types and standards. Has comprehensive knowledge of life cycle assessment methodology. The student is informed about the environmental quantities typical of energy production and user (production) facilities. Knows the databases, models and software that can be used during life cycle assessment. Understands the dangers of shifting impacts between different environmental impact categories. The student is aware of the basic environmental mechanisms of different environmental impact categories. Understands the application areas of life cycle assessment and the specifics of each area for LCA. The student is informed about the range, types, and availability of primary and secondary data that can be used in a life cycle assessment. Understands the process of critically reviewing the results of life cycle assessment and the methods of assessing data quality. AbilityDescribes real technology systems with life cycle models. The student is able to assess environmental impacts in multiple ways. The student can identify complex environmental problems, explore, formulate and (using learned practical application) the theoretical and practical background needed to analyze them. The student solves complex, computationally intensive tasks using IT skills. The student can express his or her thoughts orally and in writing. Interprets the results of a life cycle assessment (LCA). Creates the conceptual life cycle model using the appropriate target software. Selects secondary data sources and databases for the life cycle model. Defines the life cycle boundaries of energy systems. Use the life cycle assessment results in the application areas that meet the set goals. AttitudeThe student constantly monitors his or her work, results and conclusions. The student expands his or her knowledge of energy management and sustainability through continuous learning. Open to the use of information technology tools. The student seeks to learn about and routinely use environmental tools needed to solve energy management problems. The student develops the ability to provide accurate and error-free problem solving, engineering precision and accuracy. The student applies energy efficiency, sustainability and environmental awareness in solving life cycle assessment tasks. The student monitors changes in legislation. The student publishes his or her results under professional rules. The student publishes his or her opinions and views without offending others. General rulesLearning outcomes are assessed based on two mid-year has written performance measures (one partial and one summative academic performance assessment). Summarizing academic performance evaluation: a complex, written way of evaluating the competence-type competence elements of the subject and knowledge in a closed examination, the dissertation asks for the necessary lexical knowledge during the performance evaluation. The available working time is 30 minutes. Partial performance evaluation (project task): a complex way of evaluating the knowledge, ability, attitude, and independence and responsibility type competence elements of the subject, which is the individual homework. Assessment methodsDetailed description of mid-term assessmentsMid-term assessment No. 1Type:diagnostic assessmentNumber:1Purpose, description:Checking knowledge-type competencies in writing (level assessment) is necessary to complete the subject successfully. The evaluation will take place in electronic form at the lecture, with a maximum duration of 30 minutes and 30 points. The summative assessment can be improved/replaced during the replacement period. -----Mid-term assessment No. 2Type:formative assessment, project-based, complexNumber:1Purpose, description:The basic aim of the partial performance assessment is to examine the existence of application skills and learning outcomes belonging to the attitude, autonomy and responsibility competence group. The way to do this is to create a life cycle model in 2-3 groups and then present the results to the laboratory practice group. The topic of the tasks is chosen individually, but it is also possible to choose from a predefined list. The chosen topics must be finalized by the third week of education. The requirements and evaluation principles of the prepared model are included in terms of reference. The students can get up to 70 points with this task.Detailed description of assessments performed during the examination periodThe subject does not include assessment during the examination period.The weight of mid-term assessments in signing or in final gradingIDProportionMid-term assessment No. 130 %Mid-term assessment No. 270 %The weight of partial exams in gradeThere is no exam belongs to the subject.Determination of the gradeGradeECTSThe grade expressed in percentsvery good (5)Excellent [A]above 90 %very good (5)Very Good [B]85 % - 90 %good (4)Good [C]72 % - 85 %satisfactory (3)Satisfactory [D]65 % - 72 %sufficient (2)Pass [E]50 % - 65 %insufficient (1)Fail [F]below 50 %The lower limit specified for each grade already belongs to that grade. Attendance and participation requirementsThe lack of the value means that there is no attendance requirement. At least#160;70% of#160;laboratory practices (rounded down) must be actively attended.#160;#160;</p>			

Subject code	Subject name		Requirement	ECTS credit
BMEGEENMWDA	Final project A		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
In course of the Final Project A one student or group of 2 students will work on one selected challenging problem of mechanical engineering. Several experimental and/or numerical project proposals will be announced by the project leaders. The aim of the course is to develop and enhance the capability for complex problem solving of the students under advisory management of their project leader. At the end of each semester a written Project Report is to be submitted and the summary and findings of the investigations on the selected problem is to be presented as Project Presentation.				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENMWDB	Final project B		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
The aim of the subject of is to demonstrate the ability of the student to solve high level, practical engineering problems, based on acquired knowledge in the fields of mechanical engineering. The projects have to be prepared by the students under the guidance of supervisors. The Final Projects include tasks in design, simulations, laboratory tests, manufacturing as well as controlling, interfacing and software tasks. The expected result is mostly a Final Report prepared according to written formal requirements. During the Final Exam, the results have to be explained in an oral presentation.				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNKDA	Master Thesis Project A		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNKDA#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNKDB	Master Thesis Project B		Mid-semester mark	15
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNKDB#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNKSG	Intenrship M		Signature	0
Course type	Course code	Course language	Timetable information	
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNKSG				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNWEC	Energy Conversion		Mid-semester mark	5
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English	WED:10:15-12:00(D224)	
Practice	23-1-ENG-G	English	THU:16:15-18:00(D216,D218)	
ONLY FOR MSc STUDENTS!BSc students should choose BMEGEENBGEB,#160;,"Energy processes and equipments"#160;subject.#160;https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNWEC#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNWME	Measurement in Energy Engineering		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	23-1-ENG-LAB	English	FRI:14:15-16:00(D218)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNWME#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNWPR	Teamwork Project		Mid-semester mark	6
Course type	Course code	Course language	Timetable information	
Laboratory	23-1-ENG-LAB	English		

https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNWPR#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNWSE	Dynamic simulation of energy engineering systems		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English	FRI:10:15-12:00(D216)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNWSE#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENNXTU	Turbines		Mid-semester mark	5
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English	MON:08:15-10:00(KF82)	
Practice	23-1-ENG-G	English	MON:10:15-12:00(KF82)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENNXTU#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEENUVHT	Advanced thermodynamics		Mid-semester mark	4
Course type	Course code	Course language	Timetable information	
Lecture	23-1-ENG-E	English		
Practice	23-1-ENG-G	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEENUVHT#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEÉPAG62	Air-Conditioning		Exam	4
Course type	Course code	Course language	Timetable information	
Lecture	A25	English	WED:08:15-10:00(KF86)	
Practice	A26	English	WED:10:15-12:00(KF86)	
<p>Air-Conditioning BMEGEÉPAG62 Main aims and objectives, learning outcomes of the subject: The objective is the introduction to the fundamentals of air-conditioning systems in buildings providing a comprehensive knowledge on the theory and practice of system design and dimensioning with particular attention to the most recent technologies. By the end of this course you will: - Have knowledge about the aims of air-conditioning: providing comfort - both thermal and good indoor air quality, reduce energy consumption, increase energy performance, etc. - Be able to apply appropriate mathematical and computer-based methods for the calculation of buildings' heat loads and cooling loads, sizing of air-conditioning elements. - Be able to apply knowledge of techniques, codes and standards of practice to the design of cooling components and systems. Method of education: The theoretical background will be interpreted via lectures, the calculations and tools will be presented during the seminars. Calculation problems/examples will require active participation. Detailed thematic description of the subject (by topic, min. 800 character): Date of class Topics to be discussed, readings required for the class Week 1 Introduction, AC systems, types Heat transfer Week 2 Thermal comfort Heat load calculation Week 3 Thermal comfort, examples Indoor Air Quality Week 4 Cooling load calculation h-x diagram, psychrometric chart Week 5 Elements, heat exchangers, hum. Volume flow rate calculation Week 6 Elements, heat exch. cooling, hum Injection Week 7 Test 1, HW out Injection Week 8 Pressure diagram Air Inlets, SCHAKO Week 9 Elements, heat recovery Week 10 Elements, filters Week 11 Air handling processes Duct network, sizing Week 12 Air handling processes Week 13 Air handling unit, calc. example Week 14 Test 2 HW in Requirements and grading a) in term-period Knowledge, understanding and skills are assessed through a combination of written tests and homework throughout the semester. Homework will be distributed during the semester and will have to be turned in by the end of the course, before the exam period. Later submission is allowed but a fee has to be paid and homework will have to be turned in by the 3rd week of the exam period. Homework will not be graded but is compulsory in order to receive a grade. b) in examination period The course ends with an exam in the exam period. Student will be allowed to take the exam if both mid-term and end-term tests are passed. c) Disciplinary Measures Against the Application of Unauthorized Means at Mid-Terms, Term-End Exams and Homework URL: https://epget.bme.hu/subjects.php?lepes=2&tid=216</p>				
Subject code	Subject name		Requirement	ECTS credit
BMEGEGIBXGA	Fundamentals of Mechanical Engineering Drawing		Mid-semester mark	5
Course type	Course code	Course language	Timetable information	
Lecture	A_EA	English	TUE:10:15-13:00(R113)	
Practice	A_ERAS	English	THU:10:15-12:00(R112,R111)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEGIBXGA#160;				

Subject code	Subject name			Requirement	ECTS credit
BMEGEGINWDT	Machine Design and Production Technology			Exam	4
Course type	Course code	Course language	Timetable information		
Lecture	EA	English	FRI:08:15-10:00(R113)		
Practice	G2	English	FRI:10:15-12:00(R113)		
Practice	G1	English	FRI:10:15-12:00(R113)		
https://oktatas.gpk.bme.hu/tad/tantargy/BMEGEGINWDT#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEGTAG93	CAD/CAM application			Mid-semester mark	3
Course type	Course code	Course language	Timetable information		
Laboratory	J4	English	THU:16:15-18:00(G123)		
Laboratory	J3	English	THU:18:15-20:00(G123)		
Laboratory	J2	English	TUE:14:15-16:00(G123)		
Lecture	J1	English	TUE:10:15-12:00(G113)		
https://manuf.bme.hu/?page_id=1797&lang=en#mmme					
Subject code	Subject name			Requirement	ECTS credit
BMEGEGTAG94	Manufacturing processes			Exam	4
Course type	Course code	Course language	Timetable information		
Laboratory	J2	English	MON:14:15-16:00(G113)		
Lecture	J1	English	MON:12:15-14:00(G116)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEGTAG94#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEGTNWNC	NC Machine Tools			Mid-semester mark	3
Course type	Course code	Course language	Timetable information		
Lecture	J1	English	THU:15:15-16:00(T47)		
Practice	J4	English	THU:16:15-17:00(G112)		
Practice	J2	English	THU:16:15-17:00(T47)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEGTNWNC#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEGTNWPP	Process Planning			Mid-semester mark	3
Course type	Course code	Course language	Timetable information		
Lecture	J1	English	FRI:08:15-09:00(G113)		
Practice	J2	English	FRI:09:15-10:00(G113)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEGTNWPP#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMIBXIT	Control engineering			Exam	4
Course type	Course code	Course language	Timetable information		
Lecture	22o_A_E	English	WED:10:15-12:00(D401); THU:08:15-10:00(D401); THU:08:15-10:00(D401)		
Practice	22o_A_G	English	WED:10:15-12:00(D401)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEMIBXIT#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMIBXMT	Measurement techniques			Mid-semester mark	4
Course type	Course code	Course language	Timetable information		
Laboratory	22o_A_L02	English	FRI:10:15-12:00(D532)		
Laboratory	22o_A_L01	English	FRI:10:15-12:00(D532)		
Lecture	22o_A_E	English	MON:12:15-14:00(D515)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEMIBXMT#160;					

Subject code	Subject name			Requirement	ECTS credit
BMEGEMINWAC	Advanced Control and Informatics			Exam	4
Course type	Course code	Course language	Timetable information		
Lecture	22o_A_E	English	WED:08:15-10:00(KF87)		
Practice	22o_A_G	English	MON:16:15-18:00(KF82)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEMINWAC#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMMBXM1	Statics			Mid-semester mark	4
Course type	Course code	Course language	Timetable information		
Lecture	LEC	English	MON:10:15-12:00(KF87)		
Practice	SEM1	English	THU:12:15-14:00(KF81)		
https://oktatas.gpk.bme.hu/tad/tantargy/BMEGEMMBXM1#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMMBXM3	Dynamics			Exam	5
Course type	Course code	Course language	Timetable information		
Lecture	LEC	English	WED:10:15-12:00(KF87)		
Practice	SEM	English	WED:16:15-18:00(KF87)		
https://oktatas.gpk.bme.hu/tad/tantargy/BMEGEMMBXM3#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMMNWCM	Continuum Mechanics			Mid-semester mark	5
Course type	Course code	Course language	Timetable information		
Lecture	E	English	TUE:12:15-14:00(KF81)		
Practice	G1	English	THU:14:15-16:00(KF81)		
https://oktatas.gpk.bme.hu/tad/tantargy/BMEGEMMNWCM#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMTAGE1	Metal forming			Mid-semester mark	4
Course type	Course code	Course language	Timetable information		
Laboratory	L2	English	THU:16:15-18:00		
Laboratory	L1	English	THU:16:15-18:00		
Lecture	Ea	English	THU:14:15-16:00(G120)		
BME GPK TAD#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMTAGE2	Nondestructive testing of materials			Exam	3
Course type	Course code	Course language	Timetable information		
Lecture	Ea	English	THU:14:15-16:00(MT103)		
Subject code	Subject name			Requirement	ECTS credit
BMEGEMTBGF1	Materials engineering			Exam	4
Course type	Course code	Course language	Timetable information		
Laboratory	L1B	English	MON:16:15-18:00		
Laboratory	L1A	English	MON:16:15-18:00		
Laboratory	L2A	English	WED:12:15-14:00		
Laboratory	L2B	English	WED:12:15-14:00		
Lecture	AEa	English	MON:10:15-12:00(G120)		
BME GPK TAD#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEMTNWFF	Fatigue and Fracture			Exam	3
Course type	Course code	Course language	Timetable information		
Lecture	Ea	English	THU:10:15-12:00(MT103)		
BME GPK TAD#160;					

Subject code	Subject name		Requirement	ECTS credit
BMEGEPTAGE3	Polymer processing		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	LAB_1	English	MON:10:15-12:00(MT_PTLAB)	
Laboratory	LAB_2	English	MON:10:15-12:00(MT_PTLAB)	
Lecture	LECT	English	MON:10:15-12:00(T200)	
<p>https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEPTAGE3#160;#160; The aims of this subject is at familiarizing the students with the polymer processing technologies in details: preliminary techniques, extrusion, blow molding, thermoforming, rotational molding, polymeric foams and elastomers technology.#160; Topics:#160;classification of polymer processing technologies. Basic rheological aspects of polymers. Preliminary techniques of polymer processing (material conveying, drying, mixing, dosing etc.). Calendering. Extrusion. Extruder constructions, single and twin screw extruders. Compounding wit extruder. Extrusion dies (film blowing, flat film-, pipe, sheet, profile extrusion; extrusion blow molding; extrusion coating). Thermoforming: vacuum and pressure forming. Rotational molding. Foams technology: thermoplastic and thermoset foams. Elastomer technologies. Finishing and decoration. Joining technologies: welding and adhesive bonding. #160; /* Font Definitions */ @font-face {font-family:"Cambria Math"; panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:238; mso-generic-font-family:roman; mso-font-pitch:variable; mso-font-signature:-536870145 1107305727 0 0 415 0;} @font-face {font-family:Calibri; panose-1:2 15 5 2 2 2 4 3 2 4; mso-font-charset:238; mso-generic-font-family:swiss; mso-font-pitch:variable; mso-font-signature:-536870145 1073786111 1 0 415 0;} @font-face {font-family:"Palatino Linotype"; panose-1:2 4 5 2 5 5 3 3 4; mso-font-charset:238; mso-generic-font-family:roman; mso-font-pitch:variable; mso-font-signature:-536870265 1073741843 0 0 415 0;} /* Style Definitions */ p.MsoNormal, li.MsoNormal, div.MsoNormal {mso-style-unhide:no; mso-style-qformat:yes; mso-style-parent:""; margin-top:0cm; margin-right:0cm; margin-bottom:8.0pt; margin-left:0cm; line-height:107%; mso-pagination:widow-orphan; font-size:11.0pt; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;} .MsoChpDefault {mso-style-type:export-only; mso-default-props:yes; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;} .MsoPapDefault {mso-style-type:export-only; margin-bottom:8.0pt; line-height:107%;} @page WordSection1 {size:595.3pt 841.9pt; margin:70.85pt 70.85pt 70.85pt 70.85pt; mso-header-margin:35.4pt; mso-footer-margin:35.4pt; mso-paper-source:0;} div.WordSection1 {page:WordSection1;} --> /* Style Definitions */ table.MsoNormalTable {mso-style-name:"Normál táblázat"; mso-tstyle-rowband-size:0; mso-tstyle-colband-size:0; mso-style-noshow:yes; mso-style-priority:99; mso-style-parent:""; mso-padding-alt:0cm 5.4pt 0cm 5.4pt; mso-para-margin-top:0cm; mso-para-margin-right:0cm; mso-para-margin-bottom:8.0pt; mso-para-margin-left:0cm; line-height:107%; mso-pagination:widow-orphan; font-size:11.0pt; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-</p>				
Subject code	Subject name		Requirement	ECTS credit

Subject code	Subject name		Requirement	ECTS credit
BMEGEPTBGE2	Injection molding		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	LAB_1	English	MON:08:15-10:00(MT_PTLAB)	
Lecture	LECT	English	MON:08:15-10:00(T200)	

<https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEPTBGE2> Objectives: theoretical and practical understanding of the injection molding technology. Knowledge of production engineering and design aspects of modern plastic products. Understanding of the most advanced design and simulation procedures.#160; Topics: detailed description of the injection molding technology. Analysis of the process cycle diagram. Construction and operation of injection molding machines. Design for injection molding. Materials for injection molding, and fiber reinforced materials. Methods for the identification and elimination of molding defects. Injection mold design and injection molding simulation. /* Font Definitions */ @font-face {font-family:"Cambria Math"; panose-1:2 4 5 3 5 4 6 3 2 4; mso-font-charset:238; mso-generic-font-family:roman; mso-font-pitch:variable; mso-font-signature:-536870145 1107305727 0 0 415 0;} @font-face {font-family:Calibri; panose-1:2 15 5 2 2 2 4 3 2 4; mso-font-charset:238; mso-generic-font-family:swiss; mso-font-pitch:variable; mso-font-signature:-536870145 1073786111 1 0 415 0;} @font-face {font-family:"Palatino Linotype"; panose-1:2 4 5 2 5 5 3 3 4; mso-font-charset:238; mso-generic-font-family:roman; mso-font-pitch:variable; mso-font-signature:-536870265 1073741843 0 0 415 0;} /* Style Definitions */ p.MsoNormal, li.MsoNormal, div.MsoNormal {mso-style-unhide:no; mso-style-qformat:yes; mso-style-parent:""; margin-top:0cm; margin-right:0cm; margin-bottom:8.0pt; margin-left:0cm; line-height:107%; mso-pagination:widow-orphan; font-size:11.0pt; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-

fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;} .MsoChpDefault {mso-style-type:export-only; mso-default-props:yes; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-fareast-font-family:Calibri; mso-fareast-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-bidi-font-family:"Times New Roman"; mso-bidi-theme-font:minor-bidi; mso-fareast-language:EN-US;} .MsoPapDefault {mso-style-type:export-only; margin-bottom:8.0pt; line-height:107%;} @page WordSection1 {size:595.3pt 841.9pt; margin:70.85pt 70.85pt 70.85pt 70.85pt; mso-header-margin:35.4pt; mso-footer-margin:35.4pt; mso-paper-source:0;} div.WordSection1 {page:WordSection1;} --> /* Style Definitions */ table.MsoNormalTable {mso-style-name:"Normál táblázat"; mso-tstyle-rowband-size:0; mso-tstyle-colband-size:0; mso-style-noshow:yes; mso-style-priority:99; mso-style-parent:""; mso-padding-alt:0cm 5.4pt 0cm 5.4pt; mso-para-margin-top:0cm; mso-para-margin-right:0cm; mso-para-margin-bottom:8.0pt; mso-para-margin-left:0cm; line-height:107%; mso-pagination:widow-orphan; font-size:11.0pt; font-family:"Calibri",sans-serif; mso-ascii-font-family:Calibri; mso-ascii-theme-font:minor-latin; mso-hansi-font-family:Calibri; mso-hansi-theme-font:minor-latin; mso-fareast-language:EN-U

Subject code	Subject name	Requirement	ECTS credit
BMEGEVÉAG04	Measurement Techniques for Chemical and Environmental Processes	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Laboratory	A28	English	THU:09:15-11:00(D101)
Practice	A27	English	THU:08:15-09:00(D101)

BMEGEVÉAG04 Measurement for Chemical and Environmental Processes (0/1/2/f/3) Aim of the subject: Basic measurement techniques and their application possibilities in chemical industry and environmental protection. Topics of the subject: 1-6. week : Classroom / Dep. of Building Services and Proc.Engin./ 5x3 lessons. - Basic concepts for process plant instrumentation. Instrument selection. (Temperature, flow rate, pressure, level and weight measurement methods.) - Mixing autoclave. Mixing performance is calculated. Torque measurement. Data processing. -Instrumentation and control of dryers.Measurement of heat- and mass transfer coefficients. Air humidity measurement. - Instrumentation and control of evaporators. Measurement of heat- and mass transfer coefficients. Composition Measurement. - Water quality monitoring. pH, conductivity, turbidity measurements. 6-7week: Lab. Exercises / Dep. of Building Service and Proc.Engin./ 2x3 lessons LAB1. Measurement of a convective dryer. LAB2. Measurement of a single effect evaporator. 8-9. week: Lab. Exercises / Department of Fluid Mechanics/ 2x3 lessons. LAB3. Investigation on capture hood of hot flue gas LAB4. Wind tunnel investigation on pollutant transport 10-11. week: Lab. Exercises / Department of Energy Engineering/ 2x3 lessons. LAB5. Reduction in emissions with Catalytic Converters LAB6. Determination of the Three-way Catalyst Conversion Efficiency 12-13. week: Lab. Exercises / Department of Hydrodynamic Systems/ 2x3 lessons. LAB7. Measurement of fluidization LAB8. Measurement of cyclone 14. week: /Dep. of Building Services and Proc.Engin. TEST practices material URL: <https://epget.bme.hu/subjects.php?lepes=2&tid=331>

Subject code	Subject name	Requirement	ECTS credit
BMEGEVGA4SD	BSc Final Project	Mid-semester mark	15

Course type	Course code	Course language	Timetable information
Practice	AnGy_a	English	

<http://www.hds.bme.hu/oktatas.php?sm=1&lang=EN> One-semester long individual project work. 10 hours/15 credits. * VG in the code stand for the supervising Department of Hydrodynamic Systems.

Subject code	Subject name	Requirement	ECTS credit
BMEGEVGAG04	Volumetric Pumps and Compressors	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
Lecture	AnE	English	THU:12:15-13:00(D327)
Practice	AnGy	English	THU:13:15-14:00(D327)

<http://www.hds.bme.hu/oktatas.php?sm=1&lang=EN> Main aims and objectives, learning outcomes of the subject: Upon finishing the course, the students will be familiar with the operating principles and basic types of positive displacement pumps and compressors. They will be able to perform simple sizing tasks and design basic hydraulic circuits. Method of education: lecture: 1h/w seminar: 1h/w laboratory: 0h/w homework: two design problems Detailed thematic description of the subject: Positive displacement pumps. Pump characteristic and performance. Reciprocating and rotary types. Gear pumps. Performance of a gear pump. Characteristics. Pressure balancing. Bearing forces. Screw pumps. Screw pumps for delivery of higher viscosities fluid. Roots blower. Delivery, isentropic and adiabatic power. Reciprocating compressors. Compression efficiency. Valves. Regulation. Pressure-volume diagrams for different methods of regulating and governing compressors. Sliding vanes pump. Characteristic performance. Capacity and efficiency. Effect of viscosity.

Subject code	Subject name		Requirement	ECTS credit
BMEGEVGAV03	Chemical Engineering Fundamentals		Exam	2
Course type	Course code	Course language	Timetable information	
Lecture	AnE-Vegy	English	THU:08:15-10:00	
http://www.hds.bme.hu/oktatas.php?sm=1&lang=EN				
Subject code	Subject name		Requirement	ECTS credit
BMEGEVGAV04	Chemical Engineering Practice		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	AnL-Vegy	English	WED:08:15-10:00(L-HIDROLAB)	
Practice	AnGy-Vegy	English	WED:08:15-10:00(D327)	
http://www.hds.bme.hu/oktatas.php?sm=1&lang=EN				
Subject code	Subject name		Requirement	ECTS credit
BMEGEVGBG01	Introduction to mechanical engineering		Exam	4
Course type	Course code	Course language	Timetable information	
Laboratory	AnL3	English		
Laboratory	AnL1	English	WED:10:15-12:00(L-HIDROLAB)	
Laboratory	AnL2	English	WED:10:15-12:00(L-HIDROLAB)	
Lecture	AnE	English	THU:08:15-10:00(K150)	
Practice	AnGy1	English	WED:10:15-12:00(D327)	
Practice	AnGy2	English	WED:10:15-12:00(D327)	
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBG01#160;				
Subject code	Subject name		Requirement	ECTS credit
BMEGEVGBG03	Measurement Technique of Processes		Mid-semester mark	3
Course type	Course code	Course language	Timetable information	
Laboratory	AnL2	English		
Laboratory	AnL1	English		
Lecture	AnE	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBG03#160; Main objectives of the subject: The aim of this subject is to present the fundamental devices and methods of measurement techniques of processes. The course presents the mathematical methods of the measuring techniques and the signal processing; shows the practical usage of them; and points out the achievable results. Detailed thematic description of the subject: Lectures: 7*2h Reviewing the basic concepts of probability theory and mathematical statistics; Error Estimation for indirect measurements; estimating systematic errors Estimating systematic (accuracy class) and random errors ensemble for indirect measurement results; Calibration The fundamentals of measuring time variant signals: Sampling and Quantization Theorems; Theorem's analysis; Consequences in measuring techniques Fourier series and transformation, and their role in signal processing; The Spectrum and it's applications; Recognizing periodic and noise processes#160; Application of spectrum and cepstrum analysis for investigation operating machines#160; The real measurement result; Noise, as the characterization of stochastic processes; Amplitude density function; Autocorrelation and Cross correlation functions#160; Application of Autocorrelation and Cross correlation technique for analyzing periodic and transient signals#160; Laboratory practices: 4*3,5h Pressure transducer's response to step function Pressure transducer's response to harmonic excitation Measuring transmission characteristics of an impulse line Investigating the effects of sampling parameters				
Subject code	Subject name		Requirement	ECTS credit
BMEGEVGBG06	Individual project 1.		Mid-semester mark	4
Course type	Course code	Course language	Timetable information	
Laboratory	AnL-EGR	English		
Laboratory	AnL-HDR	English		
Laboratory	AnL-ÉPGET	English		
Laboratory	AnL-ARA	English		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBG06#160; Independent Study 1 BMEGEVGBG06 One-semester long individual project work. 4 hours/4 credits.				

Subject code	Subject name			Requirement	ECTS credit
BMEGEVGBG13	Fluid Flow Systems			Mid-semester mark	4
Course type	Course code	Course language	Timetable information		
Laboratory	AnL	English	THU:16:15-17:00(KF83)		
Lecture	AnE	English	THU:14:15-16:00(KF83)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBG13#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGBKSD	Final project			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	AnGy	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBKSD#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGBKSZ	Summer Internship			Signature	0
Course type	Course code	Course language	Timetable information		
Practice	AnGy	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGBKSZ#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGNKDA	Master Thesis Project A			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	AnGy	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGNKDA#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGNKDB	Master Thesis Project B			Mid-semester mark	15
Course type	Course code	Course language	Timetable information		
Practice	AnGy	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGNKDB#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGNWPR	Teamwork Project			Mid-semester mark	6
Course type	Course code	Course language	Timetable information		
Laboratory	AnL	English			
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGNWPR#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGNX26	Hemodynamics			Mid-semester mark	3
Course type	Course code	Course language	Timetable information		
Lecture	AnE	English	THU:12:15-14:00		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGNX26#160;					
Subject code	Subject name			Requirement	ECTS credit
BMEGEVGNX27	Flow Stability			Mid-semester mark	3
Course type	Course code	Course language	Timetable information		
Lecture	AnE	English	THU:10:15-12:00(D327)		
https://oktatas.gpk.bme.hu/tad/en/tantargy/BMEGEVGNX27#160;					