



Budapesti Műszaki és Gazdaságtudományi Egyetem
(Budapest University of Technology and Economics)
Faculty of Economic and Social Sciences

ENGINEERING MANAGER

Full-Time BA programme

Recommended curriculum, preliminary course schedule, progress guide (from the autumn term of 2022)

Budapest, 1 July 2022

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Basic information

Level of studies: BA

Mode of study: full-time

Qualification: engineering manager

Form of financing: state scholarship / self-financed

Duration of the programme: 7 terms

Short Description of the Programme

With a training history of well over 230 years in engineering and 80 years in economics, Budapest University of Technology and Economics offers an ideal environment for its Engineering Management course. It is no coincidence, that BME was the first to start such a training, and has been the number one training site of the course in Hungary for the past 20 years.

An engineering manager speaks the same language with technical and management professionals alike, having outstanding expertise in planning and developing management and technological processes as well as an understanding of their economic and financial aspects.

The training programme provides scientific, engineering, IT, business and management skills, making the graduates become successful participants in managing complex technical and economic tasks, i.e. in the technical and business planning and management of a technological process, in the control of the implementation and in the evaluation of its results. The training is strongly project based and is closely connected to modern technologies, innovation, state-of-the-art management and financial skills.

Abbreviations in the Recommended Curriculum

Subject type

C: Compulsory subject

CE: Compulsory elective subject

E: Elective subject

CR: Criterion Requirement

Final Examination Subject

FE: Final examination subject

Weekly Hours

Weekly Hours = Lectures + Practicals/Seminars + Laboratory work

Assessment Type

e: examination

t: (mid-)term grade

s: signature required

Credit value

Section 108 (24) of the Higher Education Act: Credit: a unit of the student's work which represents, in relation to the subject or curricular unit, the estimated time necessary for the acquisition of a specific body of knowledge and the fulfilment of requirements; one credit equals 30 study hours on average, and the value of a credit – supposing that the student's performance was accepted – does not depend on the evaluation of the student's knowledge.

Example of Notation

Example: Basics of Management - 4/t/5

Explanation: Compulsory subject, 4 contact classes/week, mid-term grade, 5 credits.

Miscellaneous Remarks on the Recommended Curriculum

The recommended curriculum is pursuant to Section 49 (4) of the Higher Education Act. It is a course schedule including a breakdown of subjects and criteria requirements by term. Scheduling their studies according to the Recommended curriculum students can complete their studies based on an even workload within the length of training specified in the training and outcome requirements and meeting the preliminary study requirements for all subjects. The Code of Studies and Exams (TVSZ) regulates the rights and obligations of students arising from their student status. In addition, the frameworks and possibilities for continuing the studies are described in the descriptions of the programmes and subjects.

During the programme, some of the subjects are built on another, so the previous completion of one or more subjects is a prerequisite of taking certain subjects. This is the so-called prerequisite, which is a completed subject prescribed for the enrolment of a particular subject or curricular unit. The completion of these prerequisites are defined by the preliminary course schedule of the programme, which is the list of prerequisites for all the subjects included in the recommended curriculum.

A recommended curriculum and progress in line with the preliminary course schedule is advised, as each term timetable follows the same structure every year. Deviating from the recommended curriculum may result in unexpected timetable clashes. Furthermore, it must be noted that certain subjects are offered exclusively in either the Autumn or the Spring term, but not in both.

Recommended Curriculum

Name and type of the subject			1.	2.	3.	4.	5.	6.	7.
Term 1									
Mathematics A1	C		6/e/6						
Economics I.	C		4/e/5						
Basics of Management	C	FE	4/t/5						
Business Economics	C		4/t/5						
Psychology in Practice	C		2/t/3						
Physics 1M	C		3/e/4						
Technology Theories	C		2/t/3						
Term 2									
Mathematics A2	C			6/e/6					
Economics II.	C			2/e/3					
Sociology	C			2/t/3					
Ergonomics for managers	C			4/t/4					
Physics 2M	C			2/e/3					
Chemistry	C			2/t/3					
Materials Engineering	C			2/e/3					
Digital Skills	C			2/t/2					
Communication I. CE block	CE			2/t/3					
Term 3									
Foundation of Operation Research	C				4/e/4				
Biology Basics	C				2/t/3				
Basics of Marketing	C				4/e/5				
Corporate Finance I.	C				2/t/3				
Accounting I.	C				2/e/5				
Programming	C				6/e/7				
Chemical and Biochemical Unit Operations	C				4/t/5				
Term 4									
Engineering Mechanics	C					2/t/3			
Studies in Transport Science	C					4/e/5			
Engineering systems	C					4/e/5			
Basics of Civil Engineering	C					4/e/5			
Production management	C	FE				4/t/5			
Economics of Sustainable Development	C					2/t/3			
Selected Topics of Modern Physics	C					2/e/3			
Term 5									
Business Statistics	C						2/t/5		
Business law	C						4/e/3		
The Basics of Architecture	C						4/e/5		
Basics of Quality Management	C	FE					4/t/5		
Product Management	C						2/t/3		
Geoinformatics	C						2/e/3		
Electronics Technology	C						4/e/4		
Communication II. CE block ¹	CE						2/t/3		
Term 6									
Macroeconomical Finance	C							2/t/3	
Project Management	C							2/e/3	
Software engineering management and user experience	C							2/t/3	
Special studies in engineering, CE block	CE							2/t/3	
Special management studies I.	CE	FE						4/e/5	
Projectwork	CE							4/t/5	
Elective subjects I.	E							2/t/3	
Elective subjects II.	E							2/t/3	
Term 7									
Career planning	C								2/e/3
Special management studies II.	CE	FE							4/e/5
Thesis	CE								15/t/15
Elective subjects III.	E								2/t/3
Elective subjects IV.	E								2/t/3
Internship	C								8/s/0

Total			25/3e/31	24/4e/30	24/4e/32	22/4e/29	24/4e/31	20/2e/28	25/1e/29
Physical Education and Sport (see additional info)	CR		2/s/0	2/s/0					

Specialisations (modules), curricular components

There are four specialisations (modules) within the programme: Management module (Department of Management and Business Economics), Financial management module (Department of Finance), Product management module (Department of Ergonomics and Psychology) and Sustainability and environmental management module (Department of Environmental Economics and Sustainability).

Prerequisite and planned subjects connected to the modules:

Specialisation	Prerequisite subject	Special management studies I.	Special management studies II.
Management	Basics of Management	Marketing in practice	Information management
Financial Management	Corporate Finance I.	Corporate finance II.	Investments
Product Management	Product Management	Special Issues in Product Management	Human-centred research methods
Sustainability and environmental management	Economics of Sustainable Development	Environmental Assessment (sectorial sustainability analysis)	Environmental Management

Specialisations (modules) do not necessarily start with fewer than five applicants. Students are requested to select a second module preference as well.

Criteria for selecting modules:

- 1.) Completion of set and special subjects.
- 2.) Total credit value (100 credits).
- 3.) Completion of the module's prerequisite subject.
- 4.) The classification and admission of a student on a module and their order will also be determined by the student's weighted grade point average.
- 5.) Module selection in the bachelor programme is possible every term, provided the conditions are met.

Information on the modules and selection conditions are published on the faculty's website.
<https://www.gtk.bme.hu/en>

Projects

The projects are complex, practice-oriented tasks requiring mathematical, technical, economic, financial, management, marketing and other knowledge acquired in previous terms, which the student must complete independently. The project and bachelor thesis subjects are closely built on one another. Only completion defined in our regulations will be accepted. The content of the project tasks is described in the subject datasheets, which might be different (!) for each module.

Compulsory and elective subjects

At least one subject from each of the compulsory elective subject blocks Communication I, Communication II and Special engineering in the recommended curriculum must be completed.

Planned units for Communication I CE block:

English for University Studies - GTK - B2
Communication through TED talks - GTK -B2
Deutsch für das Studium GTK - B2+
Deutsch im Unternehmen - GTK - B2
Intercultural skills - Behavioural culture of world religions
Research methodology
Philosophy
Introduction to writing

Communication II. Planned subjects for the CE block:

English for professional success - GTK - C1
Professional writing -English - GTK – C1
Deutsch für Erfolg im Beruf - GTK - C1
Self-branding: Self-management in the 21st century
Logic and Techniques of Argumentation
Technology and Humanity
Social taboos and communication

Special engineering studies, planned subjects of the CE block:

Introduction to CAD
Computational techniques of form and graphical design
Introduction to environmental engineering
Urban and regional development
Introduction to transportation for engineering managers
Waste management, hazardous wastes

Elective units (E) include all programme subjects of the Faculty and the University as well. 12 credits are required. Elective subjects must not collide with the themes of the compulsory or compulsory elective subjects of the course.

Elective subject package recommended by the Faculty

The Faculty offers 7 courses of 3 credits each in the “Wide Horizon” package during the undergraduate studies. The recommended package includes:

Sustainable Business Models
Psychology Without Taboo
Market games
Strategic Planning of Climate Protection
Product Experience and design
Regulation of online platforms with a special regard to fake news
Sport and business

Comment: Excess credits from compulsory electives can be counted towards the number of credits for elective subjects.

Bachelor subject and submission of bachelor thesis

The thesis is a prerequisite for the admission to the 7th term - 15 credits, ending with a mid-term mark - of the Project Assignment and the compulsory (C) and compulsory elective (CE) courses of the 1st-6th terms of the Bachelor's degree.

Theses submitted after the absolution (Leaving Certificate) are assessed by reviewers. The students will then receive a grade for their theses in the final examination, which counts towards their degree.

Conditions of the degree grade are published on the website of the Central Academic Office <https://www.kth.bme.hu/en/>

Traineeship

Students are required to complete a traineeship during their studies. This compulsory subject of 0 credit value is listed for term 7 according to the recommended curriculum, but students may complete it earlier after a successfully completed process of module selection. Completion can only be approved if it is in line with the conditions set forth in the subject datasheet.

Find details here: <https://www.gtk.bme.hu/en/for-students/school-year/internship/>

Preliminary Study Requirements

Term 2

Subject name	Condition
Mathematics A2	Mathematics A1
Physics 2M	Physics 1M

Term 3

Subject name	Condition
Foundation of Operation Research	Mathematics A2
Chemical and Biochemical Unit Operations	Chemistry

Term 4

Subject name	Condition
Engineering Mechanics	Mathematics A1
Studies in Transport Science	Mathematics A2
Production management	Business Economics, Mathematics A2
Economics of Sustainable Development	Economics I. Economics II.
Selected Topics of the Modern Physics	Physics 2M

Term 5

Subject name	Condition
Business Statistics	Mathematics A2
Product Management	Basics of Management
Basics of Quality Management	Business Economics

Term 6

Subject name	Condition
Macroeconomical Finance	Economics II.
Special studies in engineering, CE block	Foundation of Operation Research, Physics 2M
Special management studies I.	Economics I., Economics II., Business Economics

Term 7

Subject name	Condition
Special management studies II.	Economics I., Economics II. Business Economics
Career Planning	Psychology in Practice
Thesis	Projectwork, C and CE subjects of terms 1-6.

Leaving certificate (absolutorium)

Upon the completion of the academic requirements specified in the recommended curriculum - i.e. having obtained 210 ECTS credits - the student is issued with a Leaving Certificate (Absolutorium). Obtaining the Absolutorium is a prerequisite of being admitted to the final examination.

According to Section 67 (1) of the Code of Studies and Exams, the student's status is terminated upon the completion of their studies, on the last day of the term in which they obtained their Leaving Certificate (absolutorium).

Green Certificate

The Department of Environmental Economics and Sustainability has awarded Green Certificates since the early 2010's to Hungarian and international students, who have expressed an interest in environmental and social issues and their solution during their studies.

The Green Certificate, issued upon request from the student, lists the studies and number of classes that the student has completed in the subject of sustainable development. Such a document may be used for the student's benefit when looking for a job, as our earlier students have confirmed. The certificates are bilingual, issued in Hungarian and in English.

The condition for such a certificate is five successfully completed subjects offered by the Department of Environmental Economics and Sustainability. For students of bachelor's programme in technical engineering:

- students completing the department's Sustainability and environmental management module have to complete three compulsory subjects (during terms 4, 5 and 6) and two additional units, which do not include consultation subjects (Project and Thesis)
- students completing any of the associated departments' modules have to complete four subjects of the Department in addition to their compulsory subject during term 4 (in addition to consultations).

Planned subjects for the Green Certificate:

Environmental Economics
Environmental Management Systems
Environmental management of energy management
Environmental and regional policy of the EU
Environmental Management
Environmental Economics
Regional economics
Environmental practice of energy management
The international practice of environment protection
The international practice of environment protection
Environment assessment and risk management
Corporate environmental management
Masterclass on climate change
Human nature vs. natural environment?
Economics of sustainable development
BME International Climate Change Role-Play
The Strategic Planning of Climate Protection
Sustainable business models
Circular economy

The Green Certificate is not an accredited degree, however it may certify important skills in employment, where the employers are also committed to take actions for a sustainable development.

Find conditions of the Green Certificate at the Faculty's website: www.gtk.bme.hu

Final Examination

The final examinations shall serve to verify and evaluate the knowledge, skills and abilities required for obtaining the degree certificate, during the course of which the students shall also attest that they are capable of applying the knowledge acquired. Students must take separate final examinations for each programme. The Final Examination will test the students' synthesised knowledge, as specified in the curriculum, and will consist of several parts. Its successful completion shall mark the end of the student's studies. The Final Examination consists of: (1) public presentation and defence of the thesis; (2) oral examination on the questions compiled from the body of knowledge of Final Examination Subjects, demonstrating a complex understanding and knowledge.

Rules and regulations governing final examinations are contained in the Code of Studies and Exams. The detailed rules on the content are determined by the Faculty, based on the opinion of the Department in charge of the programme. If the student fails to turn up at the finals, their performance cannot be evaluated. In case of an unexcused and unverified absence the student will have one less available repeat options for the final examinations. The final examinations are deemed as successful if the examinee has completed each part with a minimum pass grade. A successful final examination cannot be retaken. A thesis graded as failed by the finals committee may be repeated once by submitting a new thesis in the next final examinations period at the earliest. If only one of the exams in the final examination subjects was unsuccessful, the student only has to sit a retake exam in that subject. Failed final examinations may not be retaken within two months.

Language Requirements

A state accredited, intermediate (B2 level) complex general language examination or equivalent school-leaving certificate or diploma in at least one foreign language is required for the bachelor's degree in engineering management.

Learning Languages

The Centre of Modern Languages helps students to develop and expand their language competence, while the BME Language Examination Centre, operating within the Centre of Modern Languages, is responsible for the organisation of language examinations.

The general language subjects are awarded 0 credits and include English, French, German, Italian or Spanish courses from beginner (A1) to advanced (C1) or even near-native speaker (C2) level, in 1x2 or 2x2 lessons per week. These courses are offered by the University to full-time students with free support units, calculated as follows: 1*2 hours

= 1 unit / 2*2 hours = 2 units. A total of 8 such units are available to full-time BSc/BA students and further 4 units to MSc/MA students. Additional units can be purchased at 10 000 HUF/unit.

Credit courses (Foreign Language for Engineers; Communication Skills Development; Business Language; Managerial Communication; Crosscultural Communication; Erasmus Abroad; Academic English; Deutsch in Unternehmen; Communication Development based on TED lectures) can be taken **free of charge** 1x2 per week by full-time students with a minimum of B2 proficiency at any time during their studies at the University, and are therefore not included in the language units.

Each of them is **worth 2 credits**, and their admission rules are the same as for the other elective subjects at the university.

Find detailed information at the website of the Centre of Modern Languages. (<http://inyk.bme.hu/?lang=en>)

Physical Education and Sport

Two terms of physical education are compulsory criteria in the BA programmes. Completion of the unit is attested by a signature. Physical Education and Sport may be completed in any term, although completion is recommended during the first phase of the studies.

Further P.E. subjects may be added as elective units (for further details regarding the possible payment obligations, please visit the website of the Centre of Physical Education (www.testneveles.bme.hu)).

The range of subjects and sports facilities is provided by the Centre of Physical Education. The BME Sports Centre is available for completing the subject as well as for further sporting opportunities. More than thirty sports are available.

Further information about registration for P.E., the completion options and the available sports facilities may be obtained directly from the Centre of Physical Education or its website.

Fundamental rules, based on the National Higher Education Act and BME's Code of Studies and Exams, for maintaining the state scholarship form of training and the student status

The relevant fundamental rules for studies are defined in the BME Code of Studies and Exams, based on the sections of the National Higher Education Act. The most important or fundamental rules, which lay down the duration of the programmes and the minimum performance requirements for the students are the following:

- Reclassification from state scholarship form of training to self-financed:
 - students with (partial) state scholarship have to be reclassified to the self-financed programme who did not obtain at least 36 credit points in their last two active terms in which the student did not take part in studies abroad in an EEA member state, where the studies pursued count towards the studies pursued in the University's programme, or in their field of studies did not reach the weighted grade point average required by Government Decree 139/2015 to be taken into account for reclassification. (This average is different for different periods.)
 - students with Hungarian state scholarship training may pursue their studies in higher education for twelve terms (individual financed period). If the student exhausted the individual financed period, only self-financed programmes will be available in higher education.
 - The time available for a given programme is 2 terms longer than the duration of the programme specified in the respective training and outcome requirements. If the student is unable to obtain the degree (diploma) during the individual financed period available for the programme, they can continue their studies in this course in a self-financed programme, even if the individual financed period has not yet been exhausted.

- Dismissal:
 - Dismissal for academic reasons
 - if the student fails to obtain the Leaving Certificate upon the expiry of twice the programme duration specified in the training and outcome requirements calculated from the start of the studies in the particular programme;
 - if the total number of the student's unsuccessful exams (comprehensive exams), in the same programme and same subject reaches six;
 - if the student fails to obtain the credit points for the same subject in the same programme after having taken the same subject six times;
 - if the student's cumulative grade point average in a bachelor training programme does not reach the value of 2.25 at the end of the fourth active term after enrolment, or in a master training programme does not reach the value of 2.50 at the end of the second active term after enrolment;
 - if the student did not obtain at least 20 credit points in the last three active terms in which the student did not take part in studies abroad in an EEA member state where the studies pursued count towards the studies pursued in BME's programme;
 - if the student's legal status had been previously terminated, but the student was readmitted into the particular programme through the admission process and did not obtain at least 10 credit points in the first three active terms following enrolment in which the student did not take part in studies abroad in an EEA member state where the studies pursued count towards the studies pursued in BME's programme;
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 - Dismissal by reason of non-registration
 - if the student fails on three consecutive occasions to report either the continuation or the suspension of their studies;
 - if the student fails to register even after their student status has been suspended for two terms;
 - Dismissal by reason of transfer
 - if the student has been admitted to another programme, institution or training location, or has changed the language of instruction or the study mode;
 - Exceeded number of passive terms
 - if the total period of time of the suspension of a student's status in a given programme (training) exceeds four terms in programme forms divided into cycles, six terms in single-cycle programme forms;
 - Dismissal by reason of payment arrears
 - if the student is still in arrears with payment after the expiry of the grace period given in the notice;
 - Disciplinary dismissal
 - based on a decision on disciplinary dismissal from all of the student's programmes (trainings) at the institution;

Attention! This progress guide has been prepared in accordance with the recommended curriculum, the preliminary course schedule and the related rules. This guide will help you to continue your studies in a successful and planned way. Please note that any future laws or regulations may alter the information contained in this guide. Any changes will be indicated during your studies in order not to cause problems in meeting your recommended curriculum.

Knowledge development, knowledge enrichment, talent management

BME's Faculty of Economic and Social Sciences is home of two colleges for advanced studies: Liska Tibor College of Economic and Social Sciences, founded in 2007, and KommOn Communication College, founded in 2012, which is active in the fields of society, communications and media studies. Furthermore, many GTK students are not only members of the College for Advanced Studies on Management, run by the Student Union of the University, but also have been taking the lead for years. There are also a good number of our students in ESTIEM Budapest BME, the local organisation of ESTIEM (European Students of Industrial Engineering and Management).

Our faculty has over 70 Erasmus+ and academic/administrative staff mobility agreements. Hundreds of students have taken part in Erasmus+ mobility over the past years, and almost the same number of students have spent one or two terms at our faculty. The majority of students go on Erasmus+ mobility programmes to Germany, Italy, Austria, Portugal and Spain, whilst most students arrive from France, Germany, Spain and Portugal.

In line with university regulations, GTK has been applying a rigorous application system for years, in which study and professional activities (TDK - Students' Scientific Association Conferences, College for Advanced Studies) are dominant.

The annual TDK conference is one of the most important events of the Faculty of Economic and Social Sciences. Our events are intended to provide a forum for students to report on their first steps towards academic work. We expect the students, and thus the submitted papers, to deal with the chosen topic beyond the official curriculum. On the one hand, this is reflected in the methodology used, and on the other hand, in the chosen topics, when issues that were only briefly discussed in the academic programmes are examined more thoroughly, or having acquired the relevant knowledge, problem areas which were not included in classroom education are analysed. Authors of the TDK papers are assisted by their teachers, and such cooperation may lead to their theses at a later stage.

Find more information about the TDK event on the faculty's website. (<https://www.gtk.bme.hu/en>)

Continued studies

One may proceed from the bachelor's to the master's degree course at our faculty: masters in technical management courses as well as other master courses (finances, management and leadership, accounting, Master of Business Administration, marketing, regional and environmental economic studies) start in September and February alike. Our best masters graduates may continue PhD studies in our doctoral schools. Admission to both master's and doctoral programmes is subject to an entrance exam.