Budapest University of Technology and Economics
Faculty of Transportation Engineering and Vehicle Engineering

LOGISTICS ENGINEER BACHELOR TRAINING PROGRAMME

The training programme was adopted by the Senate by Decision № …/2024-2025. (VI.30.), in force for students starting as of Autumn for 2025/2026 academic year.

I.
TRAINING AND OUTCOME REQUIREMENTS

The training and outcome requirements for the training programme as a whole are set out in the Ministerial Communication (hereinafter referred to as the "KKK" or "KKK Communication"). The training programme contains both the requirements of the KKK and the ***specific requirements of the curriculum of the training programme as actually implemented (where the KKK allows for deviations or sets limits) or supplemented by the curriculum of the training programme maintained by the Faculty of Transport Engineering and Vehicle Engineering***. (The numbering of each point and sub-point is the same as in the KKK.)

1. Basic characteristics of the training programme

1. The name of the bachelor training programme: Logistics Engineering
2. Level of qualification obtained in the bachelor training programme and indication of the qualification in the diploma:
- level of qualification: bachelor, abbreviaton: BSc
- classificaion: Logistics Engineer
3. Field of study: engineering
4. Programme duration is terms: 7 terms
5. Number of credits required to obtain the bachelor degree: 210 credits
- orientation of the training programme: balanced (40-60 percent) >> ***59%***[1]
- the number of credits allocated to the bachelor thesis: 15 credits
- the minimum number of credits to be allocated to the optional subjects: 10 credits >> ***12 credits***

6. Classification of fields of study according to the uniform classification of fields of vocational education and training:

European Qualification Frame level: 6
Hungarian Qualification Frame level: 6
ISCED-F 2013 classification: 525/0716 ***Design and manufacturing of motor vehicles, ships and aircraft***

7. Training objectives and professional competences of the bachelor training programme

The aim of the training programme is to train logistics engineers who, with their knowledge of the natural sciences, specific technical, economic, management, IT, industrial and transport technologies related to the field, are capable of analysing, organising and managing logistics processes and systems (goods transport, materials handling, warehousing, picking, loading, material supply, purchasing, distribution, waste management) at a basic level, both within and between companies, and of the related information flows. They are capable of contributing to the production, quality control and management of logistics machinery, tools and equipment that form part of logistics systems. They are prepared to continue their studies at master level.

7.1. The professional competences to be acquired

7.1.1. The Logistics Engineer's

a) knowledge

He/she

- has a comprehensive knowledge of the basic facts, directions and limits of the technical discipline.
- is familiar with logistical processes, the ways in which they are carried out and the

[1] Az orientáció százalékos értéke: a tantervi tantárgyak együttes gyakorlati és laboratóriumi gyakorlati óraszámának, valamint az összóraszámnak a hányadosa. (lásd KKK 1. melléklet 5. bek. c) pontja)

technical possibilities.
- knows the methods and means of assessing basic logistical needs and their implementation, and of practices.
- knows the principles of operation and structural characteristics of vehicles and machinery suitable for logistics processes.
- knows the operation and maintenance systems of vehicles and mobile machinery used in logistics processes.
- knows the measurement procedures, tools, instruments and measuring equipment used in logistics.
- knows the requirements and standards of health, safety and fire protection at work and in the field of logistics, and of environmental protection.
- knows the basics, boundaries and requirements of logistics, management, environmental protection, quality assurance, information technology, legal and economic disciplines that are integrally related to the field of transport and logistics.
- knows the methods of learning, knowledge acquisition, data collection, ethical constraints and problem solving techniques in logistics.
- knows computer communication, major software applications in the field.
- knows organisational, management and communication techniques.
b) skills
He/She is able to
- analyse at a basic level the disciplines that make up the knowledge base of the technical field, to synthesise relationships and to make appropriate evaluations.
- apply the computational and modelling principles and methods familiar to logistical processes.
- interpret and characterise the elements of logistics processes, their interrelationships, their role and their importance in the overall process.
- recognise the transport, transportation and material handling processes in industrial production and economic systems, and the equipment requirements for implementing the logistics system.
- organise, manage and control the operation of logistics systems.
- carry out basic engineering tasks related to the design, production, repair and organisation of the various components of logistics systems.
- apply integrated knowledge in the fields of transport, mobile machinery, process theory, industrial production processes, electronics and information technology.
- link the sub-processes of logistics systems and the components (material handling equipment, sensors, actuators, control systems, database systems, etc.) that physically implement them.
- manage and control logistics processes, taking into account the elements of quality assurance and quality control.
- detect errors in the logistics process and to select corrective actions.
- plan, organise and carry out independent learning.
- understand and use literature, computer and library resources specific to the field of logistics.
- apply the acquired IT skills to tasks in the field of transport and logistics.
- use their knowledge in a creative way to manage effectively the resources of their workplace.
- communicate in a professionally appropriate manner, orally and in writing, in mother tongue and in at least one foreign language, in accordance with the field of specialisation
- take decisions in complex and unexpected decision-making situations, taking full account of legal and ethical standards.

c) attitude
He/she
- assumes and authentically represents the social role of its profession and its fundamental relationship with the world.
- responsibly professes and represents the values of the engineering profession, and be open to professionally informed criticism.
- monitors legislative, technical, technological and administrative changes in logistics.
- is open to learning about, accepting and authentically communicating professional and technological developments and innovations in the field of logistics.
- strives to ensure that his/her self-learning in logistics is continuous and in line with his/her professional objectives.
- will endeavour to solve problems and make management decisions by listening to the opinions of his/her colleagues, preferably in cooperation.
- is committed to a high level of respect for health and the environment in his/her work.
- is attentive to promoting the professional development of his/her subordinates and to managing and supporting their efforts in this direction.
- supports the colleagues' development with sharing the experiences.
d) autonomy and responsibility
He/she
- makes independent, professionally sound decisions in unexpected decision-making situations.
- also cooperates responsibly with qualified professionals in other fields (primarily economic and legal) in the performance of the professional duties.
- identifies gaps in technology and process risks and takes the initiative to mitigate them.
- is aware of the legal, economic, safety, social, health and environmental consequences of the work and decisions.
- manages the work of the staff assigned and supervises the operation of processes and vehicles under the guidance of a supervisor.
- assesses the efficiency, effectiveness and safety of the work of subordinates.
8. Characteristics of the bachelor training programme
8.1. Professional characteristics
8.1.1. The disciplines and specialisations leading to the qualification, from which the degree is drawn:
- natural science knowledge 40-50 credits; >> ***41 credits***
  - ***mathematics 16 credits***
  - ***technical chemistry 3 credits***
  - ***mechanics, electrotechnics thermodynamics and fluid mechanics 22 credits***
- economic and social science knowledge 14-30 credits; >> ***20 credits***
  - ***management and entrepreneurship economics 4 credits***
  - ***lean knowledge 6 credits***
  - ***other economic and social science knowledge 10 credits***
- logistics engineering professional knowledge 70-105 credits, of which >> ***76 credits***
- structure, equipments and operation of vehicles and logistics machinery 10-25 credits, >> ***11 credits***
- logistics knowledge, technologies, networks, processes 25-40 credits,
>> ***26 credits***
- informatics, control engineering 10-25 credits, >> ***11 credits***
- specific professional fields of logistics 25-50 credits. >> ***28 credits***
8.1.2. Taking into account the elective specialisations, specific knowledge can be acquired in areas of specialisation appropriate to the needs of the profession of logistics

engineer: >>
- logistics engineer
The specialisation recommended by the training institution within the training as a whole must be at least 40 credits. >> ***42 credits***
8.2. Requirements for the traineeship
The traineeship must last at least six weeks and must be organised in a work placement. The traineeship is a criterion requirement.

II.
SPECIFIC CHARACTERISTICS OF THE TRAINING PROGRAMME

1. The comprehensive organisational unit responsible for the training programme
Faculty of Transportation Engineering and Vehicle Engineering

2. The person responsible for the programme
Dr. Krisztián BÓNA (lecturer ID: 72492991740)

3. Curricular requirements and prerequisite system:

3.1. Prerequisite of subject registering:
The system of prerequisites for the subjects expresses the interrelationship between the subjects. There is an indicative system of pre-requisites for the subjects, which characterises the depth of the links between the subjects.
In the absence of strong and weak prerequisites, the subject is not recommended for enrolment. In the case of co-requisite, a subject linked to a prerequisite may be taken concurrently with the subject it is building on in the same semester. The recommended prerequisite subject reflects a looser connection between the subjects, and the learning outcomes of the subsequent subject can be achieved with some additional time.

3.2. General conditions for choosing specialisations and modules and for taking up specialisation subjects:
Earn a minimum of 75 credits from the compulsory subjects of the curriculum (including the compulsory electives in economics and human sciennces and the specialised compulsory electives).

3.3. General conditions for admission to the subject "Bachelor thesis" in all specialisations:
A minimum of 170 credits from compulsory and compulsory elective subjects, including a minimum of 34 credits from specialisation subjects, and the completion of a 6-week traineeship.

3.4. Advanced level subjects:
The Mathematics A1a and Mathematics A2a subjects can be fulfilled on advanced level.

3.5. Evaluation and assessment
The evaluation and assessment methods, procedures and rules are set out in the subject descriptions (subject datasheet) in force, in accordance with the current Code of Studies.

3.6. Term designated for student mobility:
The student has the possibility to participate in international student mobility in the term designated for this purpose in the recommended curriculum, provided that the conditions set out in the Code of Studies are met, the subjects completed in the framework of mobility will be recognised as being the subjects due for the term of the recommended curriculum which the student would have been entitled to take.

3.7. Conditions for obtaining the leaving certificate and for entering the final examination:

The conditions for obtaining a leaving certificate are set out in the Code of Studies, within the legal framework. Within this framework, it is necessary to fulfil all the following criteria:
Completion of all the subjects set out in the recommended curriculum, including the elective subjects (minimum 210 credits), all the curricular criteria (2 semesters of physical education, 6 weeks of traineeship) and the submission of the bachelor thesis.

3.8. Choice of subjects for the final examination, order of the final examination:
The final examination in front of the Final Examination Board consists of the defence of the bachelor thesis and an oral examination in three final examination subjects (or subject groups). The final examination subjects or subject groups shall be selected by the Department responsible for the specialisation. The subjects shall be chosen partly from the core professional curriculum and partly from the specialisation subject area, so that each subject is worth at least 3 credits and the total of the three subjects (groups) is worth at least 15 credits.

3.9. Recommended curriculum, compulsory and elective subjects, curriculum code:
The recommended curriculum is a distribution of the subjects and criteria requirements in the curriculum into terms that a student who wishes to progress at an average pace can follow by meeting the indicative prerequisites for the admission of all subjects, so that he/she can complete his/her study requirements within the programme duration specified in the training and outcome requirements; to be admitted and completed in the terms of training.
The compulsory elective subjects in economics and human sciences, the specialised compulsory elective subjects and the elective subjects set out in the curriculum and announced in the current term are available in the study system.
As part of the training programme, students must complete four major compulsory elective subjects. The student may choose the subjects at his/her discretion from among those announced in the current semester. The Faculty offers at least sixteen major compulsory elective subjects in the framework of the training programme. The current list of subjects is available on the Faculty website: https://transportation.bme.hu/
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The indicative subject prerequisites are displayed on the subject datasheets.
Code of the model curriculum in the study system: xxx

Recommended curriculum of the training programme

	I.	II.	III.	IV.	V.	VI.	VII.
1	Mathematics A1a TE90AX00	Mathematics A2a TE90AX02	Mathematics A3I	Artificial intelligence	Labour safety	Elective course 1.	Elective course 3.
2				SM			
3			TT	1 0 1 m 3 AI KJIT	1 0 1 m 3 AI ALRT	2 0 0 m 3 SZV	2 0 0 m 3 SZV
4			2 2 0 m 4 AI TTK	Control engineering	Major compulsory elective course 3.	Elective course 2.	Elective course 4.
5	TT	TT	Fluid dynamics, thermodynamics and heat transfer 1.		SP		
6	4 2 0 e 6 AI TTK	4 2 0 e 6 AI TTK		INF	1 1 0 m 3 SZK	2 0 0 m 3 SZV	2 0 0 m 3 SZV
7	Technical chemistry VEKTAKO1	Electrotechnics - Electronics	TT	2 1 0 m 4 AI KJIT	Major compulsory elective course 4.	Compulsory elective economics and human science course 1.	Compulsory elective economics and human science course 2.
8	TT		1 2 1 e 4 AI RHT	Major compulsory elective course 1.	SP		
9	2 0 1 e 3 AI VBK		Management and business economics	JM	1 1 0 m 3 SZK		
10	Basic theories of engineering			1 1 0 m 3 SZK	Logistics information systems	GH	GH
11		TT	GH	Major compulsory elective course 2.		2 2 0 m 5 KV GTK	2 2 0 m 5 KV GTK
12		3 1 1 e 6 AI KJIT	3 0 0 m 4 SZT KTKG	SP		Logistics project	Professional orientation
13		Basics of engineering mechanics	Packaging technology	1 1 0 m 3 SZK			
14	RHT			Basics of freight forwarding			LO
15	TT KJIT		SM		SM		0 0 3 m 4 ÖP ALRT
16	2 2 2 m 7 AI VJJT	TT	1 1 1 m 4 SZT ALRT	LO	2 0 4 e 7 SZT ALRT	SP	
17	Programming	2 2 0 e 5 AI VJJT	Statistical analyses in logistics	2 1 0 m 4 SZT KTKG	Future technolgies in logistics	0 0 6 m 6 ÖP ALRT	
18		Material technology, industrial manufacturing systems		Basics of lean thinking		Logistics modelling	
19		JM					
20		2 0 0 m 3 SZT GJT					
21		Database management systems					
22	INF		SM	GH	SP		BACHELOR THESIS
23	2 0 4 m 7 AI KJIT		2 2 2 e 7 SZT ALRT	2 2 1 e 6 SZT ALRT	2 0 4 e 7 SZT ALRT	SP	
24	Value creation systems	LO	Supply chain control	Intralogistics	Freight transporting systems	2 0 4 m 7 SZT ALRT	
25		0 0 4 m 5 SZT ALRT				Gamification	
26	LO	Visualization technologies					
27	2 1 0 m 4 SZT ALRT						
28	Become a logistics engineer						
29	LO	JM	LO	SM	SP	SP	
30	0 0 2 m 3 SZT ALRT	0 0 4 m 5 SZT ALRT	2 2 2 e 7 SZT ALRT	2 2 2 e 7 SZT ALRT	3 2 1 e 7 SZT ALRT	0 0 5 m 6 SZT ALRT	0 8 0 m 15 ÖP
31	Mathematics G1F (Elective course 1.)	Physical education				Traineeship	
32		s KR TK				6weeks 0 0 s 0 KR	
33	0 2 0 m 3 AI TTK						
	Home class						
	0 2 0 s 0 KR KJK						
	Physical education						
	s KR TK						

BK	basic knowledge
PK	professional knowledge
MA	major compulsory elective course
CE	compulsory elective economics and human science course
EC	elective course
SP	specialization
MI	minor elective course
CR	criteria requirement
	term for student mobility

III.
SUBJECT DATASHEETS

The currently valid subject catalogue is available on the faculty website: https://transportation.bme.hu/