



SUBJECT DATASHEET

TECHNOLOGY MANAGEMENT

BMEGT20M005

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name

TECHNOLOGY MANAGEMENT

ID (subject code)

BMEGT20M005

Type of subject

contact lessons

Course types and lessons

<i>Type</i>	<i>Lessons</i>
Lecture	2
Practice	0
Laboratory	0

Type of assessment

term grade

Number of credits

2

Subject Coordinator

<i>Name</i>	<i>Position</i>	<i>Contact details</i>
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Dr. Danyi Pál	associate professor	danyi.pal@gtk.bme.hu
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Educational organisational unit for the subject

Department of Management and Business Economics

Subject website

<https://edu.gtk.bme.hu>

Language of the subject

magyar - HU; angol - ENG

Curricular role of the subject, recommended number of terms

Direct prerequisites

Strong None

Weak None

Parallel None

Exclusion None

Validity of the Subject Description

Approved by the Faculty Board of Faculty of Economic and Social Sciences, Decree No: 5881478/13/2024 registration number. Valid from: 11.12.2024.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

– to identify the role of technology in successful operation of companies, – to support to understand deeply the competitive nature of technology, – to introduce some proven methods of technology management

Academic results

Knowledge

1. Are aware of competitive nature of technology.
2. Understand the place and role of technology in the successful operation of the whole organization.
3. Know some proven methods of technology management.

Skills

1. Are able to follow and understand the literature of technology management.
2. Are able to communicate about technology management on professional adequate way.
3. Are able to participate in problem solving, preparing and / or making related decisions technology management point of view.

Attitude

1. Are responsive for innovation, following of technology development.
2. Are open for new results of technology management.
3. Seek for cooperation in multidisciplinary teamwork.

Independence and responsibility

1. Perform tasks in analysis of technology management problems independently.
2. Perform tasks in decision preparation and/or making related to technology management independently.
3. Take responsibility for decisions related to technology management.

Teaching methodology

Lectures.

Materials supporting learning

- Pataki B.: Technológiamenedzsment (letölthető jegyzet, BME GTK, 2021)

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

The assessment of the learning outcomes formulated in point 2.2 is based on two midterm written tests (partial performance assessment)

Performance assessment methods

Detailed description of performance evaluations performed during the term: 2x30 minutes, 2x50 points midterm written tests (partial performance assessment). Elements of the written tests: Various tasks – short essay questions, multiple choice questions etc. – from the assigned parts of the course material.

Percentage of performance assessments, conducted during the study period, within the rating

- ZH1: 50
- ZH2: 50
- total: 100

Percentage of exam elements within the rating

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	95
Very good	89–94
Good	76–88
Satisfactory	63–75
Pass	50–62
Fail	0–49

Retake and late completion

Retake test in accordance to the BME Code of Studies.

Coursework required for the completion of the subject

participation in the lectures	24
preparation for the midterm	36
total	60

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 04.11.2024.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

In order to achieve the learning outcomes set out in 2.2., the subject consists of the following thematic blocks. In the syllabus of the course announced in each semester, these topics are scheduled according to the calendar and other conditions.

- 1 The basic concepts of technology management - Technology, science, technics/technique, technology typologies. The role of technology management, its fields of activities, its tasks in the organization, its connections with other areas.
- 2 Technology life cycles - Consecutive life cycles, dominance and subdominance of technologies, market based and technology based differentiation of products and technologies. Characteristics and the management of the 4 stages of the technology life cycle.
- 3 Basics of innovation management - Types of innovation. Opportunities for disruptive innovation. Characteristics of innovative organizations. Types of open innovation, their application areas and preconditions.
- 4 Managing product innovation I. - The stages of product development. Relay approach vs. simultaneous/concurrent engineering. Agile product development.
- 5 Managing product innovation II. - Technology driven, market driven and dual drive product innovation. Proper and improper questioning of customers. Feature bloat/creep. Quantifying the risks of product innovation.
- 6 Managing process innovation - The steps of process innovation. Open process innovation.
- 7 Managing IT I. - The fundamental questions of IT strategy. The Gartner hype cycle of new IT-s.
- 8 Managing IT II. - Utilizing the internet of things at companies. Utilizing augmented reality at companies. Utilizing artificial intelligence at companies.
- 9 The basics of strategic management of technology - Strategic significance of technology. The content, context and process of technology strategy. Typical mistakes of technology strategy. The energy strategy of the corporation.
- 10 Technology portfolio analysis - Pure technology portfolio models, mixed business-technology portfolio models. Technology strategy planning based on technology portfolio analysis, aligning business and technology strategy.
- 11 Technology roadmapping - Technology roadmapping: its purpose and benefits. The structure of the technology roadmap, methods of analysis. Customizing technology roadmapping for the company, the organizational prerequisites of its application.
- 12 Managing core competencies - The criteria and technological bases of core competencies. The levels of core competence-based competition. The tasks of core competence management, and the dangers of ignoring them.

Additional lecturers

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