



SUBJECT DATASHEET

QUALITY MANAGEMENT

BMEGT20MN03

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name

QUALITY MANAGEMENT

ID (subject code)

BMEGT20MN03

Type of subject

Contact lessons

Course types and lessons

<i>Type</i>	<i>Lessons</i>
Lecture	4
Practice	0
Laboratory	0

Type of assessment

exam grade

Number of credits

5

Subject Coordinator

<i>Name</i>	<i>Position</i>	<i>Contact details</i>
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Dr. Surman Vivien	assistant professor	surman.vivien@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

Programme: **MSc in Engineering Management**

Subject Role: **Compulsory**

Recommended semester: **2**

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: 580439/11/2024 registration number. Valid from: 29.05.2024.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The aim of the subject is to introduce the role of quality management in the successful operation of organizations and to help students understand the competitive nature of quality management deeper. It demonstrates the main characteristics of the quality management systems of the various productive and service sectors. The subject introduces some of the most popular methods and tools of quality management and the basics of service quality models.

Academic results

Knowledge

1. Knows the general and specific characteristics of quality management systems, the most important directions and precisely developed boundaries related to both productive and non-productive sectors, as well as the connection of the field to management systems.
2. Knows in detail the connections, theories and the terminology used in the fields of process management and process maturity models, quality planning, supplier quality assurance and organizational self-assessment.
3. Knows the proactive application possibilities of quality management methods in order to improve quality and process.

Skills

1. Is capable of detailed analysis of the various areas of the knowledge system approaches of quality management, the synthetic development of comprehensive and special relationships, and the adequate assessment of these.
2. Is able to identify special quality management problems and to explore and formulate the detailed theoretical and practical background necessary for their solution.
3. Is capable of an interdisciplinary approach to quality management problems.
4. Is able to get involved in research and development projects specified in the field of quality management.
5. Is capable of the practical application of a wide range of quality management methods and techniques in contexts of varying complexity and varying degrees of predictability.
6. Is able to use the knowledge of quality management in accordance with the various professional expectations of a given workplace.
7. Is able to plan and manage the work of teams dealing with quality improvement tasks.

Attitude

1. Knows and accepts the comprehensive and special conditions, the professional identity, which make up the specific character of the field of expertise, and the related personal and community role. This lays the foundation for developing professional awareness.
2. Is able to understand and convey authentically the summary and detailed problems of the profession.
3. Demonstrates an innovative attitude in relation to the principles and methodological issues of the field.
4. His professional interest is deepened and consolidated.

Independence and responsibility

1. Has a significant degree of independence in the development of comprehensive and special quality management issues, and in the representation and justification of related views.
2. Takes the role of initiator with responsibility for establishing cooperation with specialists in his own and related fields.
3. Is equal partner in professional cooperation.
4. Thinks through and represents the ethical issues of the specific field.
5. Responsibly represents the principles of quality management during problem analysis and improvement.

Teaching methodology

Lectures, analysis of theoretical models, exercises, and case studies individually or in teams.

Materials supporting learning

- Topár J. – Surman V. Minőségmenedzsment Oktatási segédanyaga Műszaki menedzser és a Vezetés és szervezés mesterszakos hallgatók számára
- Egyéb, az oktatók által kiadott oktatási segédletek (<https://edu.gtk.bme.hu>)
- Defeo, J.A. (2017) Juran's Quality Handbook – The complete guide to performance excellence, 7th ed., McGraw-Hill Education.
- Evans, J.R. – Lindsay, W.M. (2017) Managing for Quality and Performance Excellence, 10th ed., Cengage Learning.
- George, M.L. – Rowlands, D. – Price, M. – Maxey, J. (2005) The Lean Six Sigma Pocket Toolbook – A Quick Reference Guide to Nearly 100 Tools for Improving Process Quality, Speed, and Complexity, George Group.
- Gillett, J. – Simpson, P. – Clarke, S. (2015) Implementing ISO 9001:2015, Infinite Ideas Limited.
- Goetsch, D.L. – Davis, S.B. (2016) Quality Management for Organizational Excellence – Introduction to Total Quality, 8th ed., Pearson.
- Kemény S. – Papp L. – Deák A. (1999) Statisztikai minőség- (megfelelőség-) szabályozás. Műszaki Könyvkiadó–Magyar Minőség Társaság, Budapest.
- Kiran, D.R. (2017) Total Quality Management key concepts and case studies, Elsevier.
- Kövesi J. – Topár J. (szerk.) (2006): Minőségmenedzsment alapjai, Typotex Kiadó, Budapest
- MSZ EN ISO 9001:2015 Minőségirányítási Rendszerek - Követelmények MSZT 2015.

- Liker, J.K. – Ross, K. (2017) The Toyota Way to Service Excellence – Lean transformation in service organizations, McGraw-Hill Education.
- Oakland, J.S. (2014) Total Quality Management and Operational Excellence – Text with cases, Routledge.
- Sower, V.E. (2011) Essentials of Quality with cases and experimental exercises, Wiley.
- Tenner A. R. – DeToro I. J. (2001): Teljes körű minőségmenedzsment TQM 3. kiadás, Műszaki Könyv-kiadó, Budapest
- Topár J. (szerk.): A műszaki menedzsment aktuális kérdései Műszaki Kiadó Budapest, 2012.
- Topár J (2001): A minőségmenedzsment -rendszerek fejlődésének néhány jellemzője a hazai vállalkozásoknál. Harvard Business Manager 4/2001 pp.50-57

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

Assessment of the learning outcomes described under point 2.2. is based on both midterm and exam period assessments.

Performance assessment methods

A. Detailed description of assessments during the term: Students can apply for the topics announced at the beginning of the semester in order to individually or in a team collect specifics and practical examples (beyond general information and literary descriptions) related to them and present them at a predetermined time (optional research and presentation). The presentation slideshows must be sent by the student to the lecturers of the course at least 2 working days before the time of the presentation, and/or the presented presentation must be uploaded to the moodle page of the subject (moodle task). With the presentation (and the underlying research) max. 25 points can be obtained, which are added to the exam score after reaching the min 50%. The signature can be obtained with the presentation (in this case, the additional plus points will be added to the exam score as a whole after reaching 50%). Furthermore, extra points can be earned during the semester with various optional class works and assignments. A maximum of 15 extra points can be obtained in one semester, of which 5 points are required for signature. The additional 10 points are added to the exam score after completing the minimum 50%. B. Assessment of the exam: A written exam must be passed: all the theoretical topics and the connected practical applicability discussed during the course must be known. A maximum of 100 points can be received for the successful solution of the T-F statements and the shorter-longer essay questions. The minimum requirement is the 50 %.

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

- Optional research and presentation: 62
- Optional tasks (during or after the lecture): 38
- Total: 100

Percentage of exam elements within the rating

- Optional research and presentation: 25
- Optional tasks (during or after the lecture): 15
- Written exam: 100
- Total: 100

Conditions for obtaining a signature, validity of the signature

From tasks, exercises and case studies (during the lecture or as a homework) the maximum of 15 plus points can be achieved. From the 15 points, collecting the minimum of 5 points is the requirement in order to be eligible for the final exam. These 5 points are not going to be counted as part of the exam, but the other maximum of 10 points is going to be added to the result of the exam after fulfilling

the minimum of 50 % on it. These tasks, exercises and case studies are cannot be replaced. The signature can also be obtained by preparing

the presentation (in this case, the additional extra points are added in their entirety to the exam score after reaching the minimum of 50%).

Issuing grades

Excellent	95
Very good	87–94
Good	75–86
Satisfactory	63–74
Pass	50–62
Fail	0–49

Retake and late completion

The presentation and the plus point tasks cannot be retaken (corrected), replaced.

Coursework required for the completion of the subject

participation in contact hours	56
preparation for contact hours	40
preparation for the exam	54
total	150

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 06.05.2024.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

The learning outcomes of 2.2 can be achieved by studying the following areas and topics

- 1 Introduction. Basics of quality management.
- 2 The role and connected experiences of quality management systems in production and service sectors.
- 3 Process management and process maturity models, Six Sigma, Lean management.
- 4 Basics and steps of quality planning.
- 5 Supplier quality assurance, choosing and evaluating suppliers, first sampling (PPAP).
- 6 Quality costs.
- 7 Organizational self-evaluation, award models, CAF.
- 8 Theoretical background and categorization of quality management methods and tools, data and information (analyses) on quality.
- 9 The concept, improvement and role of Benchmarking.
- 10 Processes of process improvement models, PDCA, DMAIC.
- 11 Idea collecting and brainstorming methods.
- 12 Process mapping and describing methods.
- 13 Problem (defect) analyzing methods.
- 14 Process control methods.
- 15 Other quality management tools.

Additional lecturers

Dr. Topár József c. egyetemi docens topar.jozsef@gtk.bme.hu

Dr. Surman Vivien egyetemi adjunktus surman.vivien@gtk.bme.hu

Dr. Benedek Petra egyetemi adjunktus benedek.petra@gtk.bme.hu

Approval and validity of subject requirements