SUBJECT DATASHEET

Design for Users with Special Needs

BMEGT52BX4T001-00

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
Design for Users with Special Needs

ID (subject code) BMEGT52BX4T001-00

Type of subject
course unit with contact hours

Course types and lessons

Type	*Lessons*
Lecture	2
Practice	2
Laboratory	0

Type of assessment
midterm grade

Number of credits
5

Subject Coordinator

Name	*Position*	*Contact details*
Dr. Pulay Márk Ágoston	Assistant Lecturer	pulay.mark@gtk.bme.hu

Educational organisational unit for the subject
Department of Ergonomics and Psychology

Subject website
https://edu.gtk.bme.hu

Language of the subject
magyar - HU

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: 580501/3/2025 registration number. Valid from: 2025.07.10.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The aim of this course is to introduce students to the principles of Design for All, universal design, accessible design, and design for special user needs. The course explores relevant technical guidelines, design strategies, and technologies that support the development of products, services, and physical environments that are usable and accessible to the widest possible range of users. The course focuses on concepts, methods, and real-world examples that help students develop a sensitive, informed, and professional approach to diverse user needs. Special attention is given to the characteristics of various disability groups (e.g., individuals with mobility, visual, auditory, cognitive, or sensory impairments), as well as other life situations (e.g., injury, illness, ageing, pregnancy) that may also generate specific usability requirements. Through hands-on assignments, students will learn how to identify user needs and apply technical and design tools to address them. By the end of the course, they will be able to develop a technically grounded proposal tailored to a specific user group that improves quality of life, supports independent living, or facilitates accessibility in everyday activities or specific scenarios.

Academic results

Knowledge

1. Possesses comprehensive knowledge of the principles of Design for All, accessible design, and design for special user needs.
2. Is able to interpret and apply these principles within the framework of ergonomic design approaches.
3. Understands the characteristics and fundamental needs of various special user groups (e.g. persons with disabilities, individuals in temporary conditions, and people of different age groups) in relation to product use, access to information, and environmental requirements.
4. Is familiar with the relevant standards and guidelines related to universal design and accessibility.

Skills

1. Able to establish effective communication with members of special user groups and involve them in ergonomic design processes.
2. Able to identify diverse user needs and consciously recognize individual differences.
3. Able to develop complex design solutions that, by taking into account various special needs, are accessible and usable for the widest possible range of users.

Attitude

1. Demonstrates sensitivity to human needs and is characterized by a user-centered approach and mindset.
2. Shows a commitment to continuous learning, seeks broad and thorough knowledge, and displays an interest in interdisciplinary perspectives.
3. Applies systems thinking and a holistic approach to problem-solving.
4. Possesses strong critical thinking and self-reflection skills.

Independence and responsibility

1. Capable of initiating the practical application of user-centered methods and techniques to address various professional problems.
2. Demonstrates openness to independently monitoring technical, technological, legal, and human-related developments in their field.
3. Able to autonomously mobilize theoretical and practical knowledge and skills, and, when necessary, collaborate effectively with members of interdisciplinary teams to achieve set goals.

Teaching methodology

The course is delivered in the form of lectures, supplemented by case study analysis, practical examples, and field observation (hospitation) in institutions specialized in supporting users with special needs. The course places a strong emphasis on interactivity, student reflection, and group work.

Materials supporting learning

- Szabó Gy. (szerk.): Tervezés speciális felhasználói körök számára. DSGI kiadó Budapest 2002
- Inclusive Design: A Universal Need – Linda L. Nussbaumer (2011)
- The Design of Everyday Things – Donald A. Norman
- EN 17161:2019 – Design for All – Accessibility following a Design for All approach in products, goods and services

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

Completion of individual assignments, participation in group work, and presentation of a semester project.

Performance assessment methods

Individual assignments – application of theoretical knowledge to concrete case studies, completed individually or in pairs (30%) Small-group
project work – development and documentation of a design proposal tailored to the needs of a specific user group (40%) Project presentation
– visual and oral presentation of the project, reflecting principles of Design for All and accessible design (20%)

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

- **Évközi beadandó feladatok**: 30
- **Kiscsoportos projektmunka**: 40
- **Projektprezentáció** : 30
- **összesen**: 100

Percentage of exam elements within the rating

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	90
Very good	89-85
Good	84-75
Satisfactory	74-60
Pass	59-50
Fail	49

Retake and late completion

A pótlás a TVSz szerint elvégezhető.

Coursework required for the completion of the subject

Órákon való jelenlét	46
Évközi beadandó feladatok	35
Kiscsoportos projektmunka	59
Projektprezentáció	10
Összesen	150

Approval and validity of subject requirements

Consulted with the Faculty Student Representative Committee, approved by the Vice Dean for Education, valid from: 07.07.2024.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

A félév során végigvett témák az alábbiak.

1 Speciális felhasználói csoportok bemutatása.
2 A segítő technológiák osztályozási rendszerének bemutatása
3 Rehabilitációs módszerek bemutatása
4 Fejlesztőpedagógiai módszerek bemutatása
5 Releváns prototípusgyártási additív technológiák bemutatása
6 Gyakorlatok
7 A tematikához illeszkedő intézményi hospitálás
8 Kiscsoportos műhelymunkák

Additional lecturers

Approval and validity of subject requirements