# SUBJECT DATASHEET

## User Experience Design

## BMEGT52BX4U000-00

# I. SUBJECT DESCRIPTION

## 1. SUBJECT DATA

**Subject name**
User Experience Design

**ID (subject code)** BMEGT52BX4U000-00

**Type of subject**
contact hour course unit

**Course types and lessons**

| *Type* | *Lessons* |
|---|---|
| Lecture | 2 |
| Practice | 1 |
| Laboratory | 1 |

**Type of assessment**
midterm grade

**Number of credits**
5

**Subject Coordinator**

| *Name* | *Position* | *Contact details* |
|---|---|---|
| Dr. Szabó Bálint | assistant professor | szabo.balint@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**
Programme: **Any programme**
Subject Role: **Compulsory elective**
Recommended semester: **0**

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**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**

Within the scope of the subject, students will learn about the basic principles of human-centered software development and research methods related to user experience (UX) design that can be applied in industry, as well as the possibilities of designing the user interface (UI).

**Academic results**

Knowledge

1. Comprehensive knowledge of the most important concepts and relationships used in user experience (UX) design.
2. Knowledge of the possibilities of human-centered software development applicable to the development of software products, the technical terms and methods for UX design.
3. Knowledge of widely applicable problem-solving techniques necessary for research in the field of human-computer interaction (HCI) and for scientific work.

Skills

1. Using a versatile, interdisciplinary approach, he identifies professional problems related to user experience design, explores and formulates the detailed theoretical and practical background necessary for their solution.
2. Applying the theories of the field of human-computer interaction and the terminology associated with them in an innovative way when solving problems.

Attitude

1. Characterized by a strong sense of criticism and self-criticism.
2. Characterized by a systems-level thinking and approach.

Independence and responsibility

1. Characterized by an initiative role, responsibility and decision-making ability.
2. Independently monitors technical, technological, economic, financial, legal and social changes related to his field of expertise.
3. Independently plans and carries out his activities.
4. Involves in research and development projects relevant to user experience design, mobilizes his theoretical and practical knowledge and skills in the project group autonomously, in cooperation with other members of the group, in order to achieve the goal.
5. Independently applies a wide range of user experience design methods and techniques in practice in contexts of varying complexity and varying degrees of predictability.

**Teaching methodology**

Lectures, written and oral communication, use of IT tools and techniques, assignments prepared in group work.

**Materials supporting learning**


- Szabó, B., 2023, Felhasználó-központú szempontok megjelenése a szoftverfejlesztés folyamataiban: Szoftverek termékmenedzsmentje a cégek sokszínű gyakorlatában. Budapest: Budapesti Műszaki és Gazdaságtudományi Egyetem. https://repozitorium.omikk.bme.hu/handle/10890/51365
- Herendy, Cs., Hercegfi, K., Szabó, B. & Tóvölgyi, S., 2024, UX kutatási módszerek: A felhasználói élmény kutatása során alkalmazható gyakorlati módszerek, tudományos hátterük és összefüggéseik. Budapest: EDGE2000. https://repozitorium.omikk.bme.hu/items/e0b85bb5-b9c5-42c3-989a-78f84de217eb
- Weinschenk, S., 2011, 100 dolog amit minden tervezőnek tudnia kell az emberekről. Budapest: Kiskapu.
- Rogers, Y., Sharp, H. & Preece, J., 2011, Interaction Design Beyond Human-Computer Interaction. New York: Wiley.
- Krug, S. (2008): Ne törd a fejem! HVG Kiadó, Budapest.
- Shneiderman, B. et. al. (2016): Designing the User Interface, 6th ed. Pearson.

# II. SUBJECT REQUIREMENTS

## TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

**General Rules**

The assessment of the formulated learning outcomes is based on a group-prepared paper to be submitted and partial performance assessments
(from end-of-class Moodle test questions).

**Performance assessment methods**

Detailed description of performance assessments during the intensive period: 1. Academic performance assessment consisting of partial performance assessments: written assessment of the course material mastered during the semester in the form of end-of-class Moodle test questions during the intensive period. 2. Submitted assessment: a complex assessment method of subject knowledge, ability, attitude,
and competence elements such as independence and responsibility from a topic chosen by the student and approved by the subject teacher.
The complex assessment is implemented in the form of group assignment solving. The content, requirements, and submission deadline of
the submitted assignment are determined by the subject teacher.

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

- **Részteljesítmény értékelésekből összeadódó tanulmányi teljesítményértékelés**: 30
- **Beadandó értékelése**: 70

**Percentage of exam elements within the rating**

**Conditions for obtaining a signature, validity of the signature**

**Issuing grades**

| | |
|---|---|
| Excellent | 91 |
| Very good | 85-90 |
| Good | 70-84 |
| Satisfactory | 55-69 |
| Pass | 40-54 |
| Fail | <40 |

**Retake and late completion**

1) Late submissions can be submitted electronically (Moodle interface) until 23:59 on the last day of the make-up period. 2) Submitted and accepted homework can be corrected by the deadline and in the manner specified in point 1), with a deduction of 5 points. 2) The academic performance evaluation resulting from the partial performance evaluations can be corrected and corrected during the make-up week.

**Coursework required for the completion of the subject**

| | |
|---|---|
| Részvétel a kontakt tanórákon | 28 |
| Részvétel a gyakorlati tanórákon | 14 |
| Részvétel a laborgyakorlati tanórákon | 14 |
| Konzultáció | 4 |
| Beadandó elkészítése | 90 |
| 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**

1 Introduction, description of subject requirements. Development of software development (SE), SDLC models and agile development. Purpose of process modeling.

2 Ergonomics, human-computer interaction, usability, user experience (UX) concepts. Characterization of the user community in the case of software products. Application of typical users (personas) and user journey during development. Design thinking.

3 Biological-psychological-social factors influencing user experience.

4 Analytical and empirical methods of software testing. Basic principles systems that can be used during analytical testing: Shneiderman, Nielsen design guidelines. Grouping possibilities of empirical methods and overview of methods. User needs assessment (interview, focus group, questionnaire) methods for testing software products. Field studies (observation, contextualized survey, design ethnography). Card sorting method for developing the concept of information architecture. Methods based on user behavior analysis (A/B testing, web analytics and artifact analysis).

5 Software usability testing. Think Aloud protocol and its different versions. Metrics that can be used during usability testing. Simple empirical testing at the product idea level: Paper prototyping.

6 Empirical methods for software usability testing: Eye tracking and application of physiological signals.

7 User interface design: basics and concepts of concept and prototyping (sketch, wireframe, mockup, prototype). Use of design systems. Software that can be used for user interface design. Case study.

8 Implementation possibilities of human-centered software development in industry.

9 The role of artificial intelligence in the field of UX design.

**Additional lecturers**

| | | |
|---|---|---|
| Dr. Szabó Bálint | egyetemi adjunktus | szabo.balint@gtk.bme.hu |
| Molnár Marietta | PhD hallgató | marietta.molnar@edu.bme.hu |
| Dr. Hercegfi Károly | egyetemi docens | hercegfi.karoly@gtk.bme.hu |
| Dr. Geszten Dalma | egyetemi adjunktus | geszten.dalma@gtk.bme.hu |

**Approval and validity of subject requirements**