SUBJECT DATASHEET

DIAGNOSTICS AND SKILL-DEVELOPMENT BY SIMULATORS

BMEGT52M400

I. SUBJECT DESCRIPTION

1. SUBJECT DATA

Subject name
DIAGNOSTICS AND SKILL-DEVELOPMENT BY SIMULATORS

ID (subject code)	BMEGT52M400

Type of subject
contact lessons

Course types and lessons

Type	*Lessons*
Lecture	2
Practice	1
Laboratory	0

Type of assessment
exam

Number of credits
4

Subject Coordinator

Name	*Position*	*Contact details*
Dr. Tóvölgyi Sarolta	assistant professor	tovolgyi.sarolta@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
Pre-2017, next review September 2021.

2. OBJECTIVES AND LEARNING OUTCOMES

Objectives

The course provides an overview of the application of simulation methods in the diagnosis of human physiologi-cal characteristics and psychological abilities, as well as in the prediction of their suitability for the job, and in the development of their sensorimotor and cognitive abilities and skills. During the teaching of the subject, the in-troductory theoretical methodological knowledge is supplemented by case studies and site visits presenting var-ious examples of the use of simulators, mainly in the field of transport and process control.

Academic results

Knowledge

1. They have comprehensive knowledge of the applications of simulators used in the HR and healthcare industries.
2. They have comprehensive knowledge of the theoretical and methodological possibilities of human per-formance measurement and evaluation.
3. They have comprehensive knowledge of the basics of the use of simulators in cognitive psychology, such as the regulation of cognitive behavior: principles, models, practical consequences.
4. They are familiar with the possibilities of simulator application in the development of abilities and skills, in the development of cognitive strategies and about the possibilities of using the simulator in group de-cision situations.

Skills

1. They are able to implement his / her knowledge of simulators and simulation.
2. They are able to recognize which abilities and skills can be tested with the help of simulation and simula-tor.
3. They are able to propose complex simulation solutions taking into account different needs.

Attitude

1. They are characterized by sensitivity to human needs. They are characterized by a user-centric thinking and approach.
2. They are characterized by continuous learning skills, broad and thorough education, interdisciplinary in-terest.
3. They are characterized by a system-level thinking and approach.
4. They are characterized by a strong critical and self-critical sense.

Independence and responsibility

1. To solve various professional problems, they apply user-centric methods and techniques independently or on the basis of professional guidance.
2. They are open to independently monitor technical, technological, economic, legal and human develop-ments in his / her field.
3. In order to a– suggested literature to achieve the goal, they mobilize their theoretical and practical knowledge and skills in an autonomous way, if necessary in cooperation with other members of an in-terdisciplinary team.

Teaching methodology

Lectures

Materials supporting learning

- ANTALOVITS M. 1995., Készségfejlesztés szimulátorral. (Habilitációs dolgozat) Budapest, ELTE BTK. Budapest, 110 o. + mell.
- ANTALOVITS, M. – IZSÓ, L., 1998., Self-assessment and learning in nuclear power plant simu-lation training. (In:) Misumi, J., Wilpert, B., Miller, R. (eds) Nuclear Safety: A Human Factors Perspective. Taylor and Francis Ltd. London, 243 – 256. o.
- ANTALOVITS, M. – IZSÓ, L. 2003., Assessment of Crew Performance and Measuring of Mental Efforts in a Cognitively Demanding Task Environment. (In:) Hockey, G.R.J., Gaillard, A.W.K., Burov, O. (eds.) Operator Functional State. The Assessment and Prediction of Human Performance Degradation in Complex Tasks. IOS Press, Amsterdam. pp. 284 – 290.
- IZSÓ, L. – ANTALOVITS, M. 1997. An Observation Method for Analysing Operators' Routine Activity in Computerised Control Rooms. International Journal of Occupational Safety and Ergonomics, Vol.3, No.3-4, 173-189.
- ANTALOVITS M. 2001., A folyamatirányító operátor készségeinek és tudásának pszichikus szer-veződése, reprezentációja. Alkalmazott Pszichológia, III/4. 5-20. o.

II. SUBJECT REQUIREMENTS

TESTING AND ASSESSMENT OF LEARNING PERFORMANCE

General Rules

The assessment of the learning outcomes set out in point 2.2 is based on two mid-term exams.

Performance assessment methods

Detailed description of assessments performed during the semester: summative assessment of learning performance: complex, written way of assessment of knowledge and skill types of competence elements of the subject in the form of two mid-term exams.

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

Percentage of exam elements within the rating

- **written exam**: 100%
- **sum**: 100%

Conditions for obtaining a signature, validity of the signature

Issuing grades

Excellent	> 90
Very good	80–89
Good	70-79
Satisfactory	60-69
Pass	40-59
Fail	< 40

Retake and late completion

To obtain the signature, resulting at least 40% of the score of the dissertation, its presentation and the oral exam according to section 3.3 is necessary. The obtained signature is valid for the period according to the general rules of the university.

Coursework required for the completion of the subject

3 14

78

120

Approval and validity of subject requirements

Pre-2017, next review September 2021.

III. COURSE CURRICULUM

THEMATIC UNITS AND FURTHER DETAILS

Topics covered during the term

To achieve the learning outcomes specified in section, 2.2, the subject consists of the following thematic blocks. The syllabus of the specific course announced in each semester shall schedule these elements of topics according to the calendar and other circums

1 Előadások témái

2 Képességvizsgálati módszerek - képességek és készségek fogalmának tisztázása.

3 Az emberi hibázás típusai, jellege, formái.

4 A szimuláció és a szimulátor fogalma, típusai, esettanulmányok.

5 Alkalmasság-vizsgáló munkaszimulátorok alkalmazási lehetőségei, esettanulmányok.

6 Az egészségügyi szimuláció jelene és jövője.

7 Gyakorlatok

8 A tematikához illeszkedő intézményi hospitálás

9 Oktató által vezetett kiscsoportos műhelymunkák, konzultáció.

Additional lecturers

Pulay Márk Ágoston tanársegéd pulay.markt@gtk.bme.hu

Approval and validity of subject requirements

Beyond Part I and II of the Subject Datasheet, Part III is approved by the head of the Department of Ergonomics and Psychology indicated
in section 1.8 in consultation with the director(s) of the programme(s) concerned.