Tárgytematika / Course Description

Basic Informatics

GKNB_MSTA052

Tárgyfelelős neve / Teacher's name: dr. Kallós Gábor

Félév / Semester: 2021/22/1

Beszámolási forma / Assesment: Folyamatos számonkérés

Tárgy heti óraszáma / Teaching hours(week): 1/1/0

Tárgy féléves óraszáma / Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of the subject/course is to introduce students to the basic concepts of data processing and visualization. After completing the course, students will understand the fundamental workflow of data processing and signal processing, and will be able to analyze, visualize and interpret data with Python and Excel.

TANTÁRGY TARTALMA / DESCRIPTION

Atoms:
- Function analysis and data processing in Excel. Short presentation of a real industrial project, theory and practice (data acquisition, measurement technique, elaboration, visualisation).
- Software development environments for Python programming language. Jupyter notebooks. Simple data types. Variables and assignments. Using help, built in functions and methods. Collections (tuple, list, set, dict). Conversion functions. Standard streams. Output formatting. Control structures (if, while, for statements). Range object. Comprehensions. Sorting. File handling.

Projects.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Evalution will take place as follows: written or oral assessment of atoms (50%) AND class and project participation (50%).

Written or oral assessment of atoms (50%): will evaluate students' knowledge related to the course material. The assessment takes place throughout the semester.

Class and project participation (50%):
- Class participation (20%) will be evaluated based on presence and the quality of questions and comments during class time. Throughout the semester at least three (3) substantive questions are expected form each student during class or consultation time;

- Successful completion of project work related to the course throughout the semester (30%).

Assessment is performed on a scale of five grades. Grades will be determined as follows:
0-39% fail,
40-54% passable,
55-69% satisfactory,
70-84% good,
85-100% excellent.

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Benny Raphael, Ian F. C. Smith, Engineering Informatics: Fundamentals of Computer-Aided Engineering, Second Edition, Wiley, ISBN: 978-1-119-95341-8

John Walkenbach, Excel Bible 2016, Wiley

Mark Pilgrim: Dive into Python 3 (http://www.diveintopython3.net/).

Zed A .Shaw: Learn Python 3 the Hard Way, Addison-Wesley, ISBN: 9780321884916.