

## Tárgytematika / Course Description

### Measuring Theories and Techniques

GKNM\_FKTA013

**Tárgyfelelős neve /**

**Teacher's name:** dr. Berta Miklós

**Félév / Semester:** 2021/22/1

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 2/2/0

**Tárgy féléves óraszám /**

**Teaching hours(sem.):** 0/0/0

---

### OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of subject is teaching basics of measurement theory and techniques, to build solid basics

for measured experimental data evaluation. Important part is application of theoretical basics using industry standard software package for data evaluation, MATLAB.

---

### TANTÁRGY TARTALMA / DESCRIPTION

Main sections:

- summary of measurement techniques
- statistical basics of data treatment and evaluation
- important statistical distribution functions
- least square method and linear regression
- time series in time and frequency domain
- correlation and spectral analysis

---

### SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

**Obligatory literature:**

- Miklós Berta: Measurement theory and techniques, lecture notes, 2021, Széchenyi University

**Suggested literature:**

- S. V. Gupta: Measurement Uncertainties, Springer 2012.
- S. G. Rabinovich: Measurement Errors and Uncertainties (Theory and Practice), Springer 2005
- J. R. Taylor: An Introduction to Error Analysis, University Science Books Sausalito, California
- A. Knight, Basics of MATLAB and Beyond, CRC Press LLC, 2000



---

## KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL