



COURSE DATASHEET

Semester:	2016/17/1
Course:	Measurement techniques in mechatronics
Code:	VEMKFIB412M
Responsible department:	Institute of Physics and Mechatronics
Department code:	MKFI
Responsible instructor:	dr. István Szalai

Course objectives:

The main objectives of this subject is to apply the measurement techniques in mechatronics.

Course content:

Introduction to SI units, derived units, errors in measurements
Electromechanical instruments for DC voltage and current measurements
Measurement of AC voltage and current
Bridge DC and AC measurements
Impedance analysers
Oscilloscope: principles of operation, and application in measurements
Measurement techniques in mechatronics
Velocity measurement methods for motion control
Lock-In measurement techniques
Time and frequency measurement in mechatronics
Measurement methods for piezoelectric material properties
Measurement methods for magnetostrictive materials
Acoustic measurement methods
Laser distance-measuring techniques

Requirements, evaluation and grading:

oral exam

Required and recommended readings:

Dr. Schnell László (főszerk.), *Jelek és rendszerek mechatronikája*, Műszaki Könyvkiadó, Bp., 1985.
Godfrey C. Onwubolu, *Mechatronics. Principles and Applications*, Elsevier Butterworth-Heinemann, Oxford, 2005.