



## COURSE DATASHEET

<b>Semester:</b>	2016/17/1
<b>Course:</b>	Sensors
<b>Code:</b>	VEMKKAB412E
<b>Responsible department:</b>	Department of Analytical Chemistry
<b>Department code:</b>	MKKA
<b>Responsible instructor:</b>	dr. Tamás Pap

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### Course objectives:

Understanding of the process of the acquisition of physical and chemical information

### Course content:

1. Signal quality: signal to-noise-ratio, types of noise. Improvement of analogous signal. 2. Improvement of digital signal. Improvement of signal form. 3. Fourier transformation and its analytical applications. 4.-5. Measurement of temperature, pressure, flow rate, volume, mass, level, density, viscosity, heat conduction. 6.-7. Measurement of optical properties. Measurement of radiation intensity. Main optical devices. Measurement of radiation absorption, stray light, refractive index and optical activity. 8.-9. Electrical conductance, measurement of paramagnetic properties. 10. Automation of chemical laboratories, computerized administration of analyses, development of information management systems (LIMS). 11. Spectrum library. 12. Basics of quality assurance. QA systems, quality control, qualification. 13. Application of up-to-date methods of instrumentation, informatics and computer science: GMP, GLP. 14. Computer aided quality assurance (CAQ). National and international standards of importance. Analytical application of information theory.

### Requirements, evaluation and grading:

Topics of the lectures

### Required and recommended readings:

Dr. Inczédy János: Folyamatos és automatikus analízis. Műszaki Könyvkiadó, Budapest, 1984.