



## COURSE DATASHEET

<b>Semester:</b>	2012/13/1
<b>Course:</b>	Electronics
<b>Code:</b>	VEMKFIB212E
<b>Responsible department:</b>	Institute of Physics and Mechatronics
<b>Department code:</b>	MKFI
<b>Responsible instructor:</b>	dr. István Szalai

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### Course objectives:

The aim of the study is to learn the basic elements of electronics.

### Course content:

1. Passive electronic devices and circuits. 2. Diodes and diode circuits. 3. Bipolar and unipolar transistors, basic circuits. 4. Amplifiers, differential amplifiers, feedback and operational amplifiers. 5. Basic operational amplifier circuits. 6. Electronic interfaces for sensors. 7. Active filters and oscillators. 8. Basic power electronics, voltage regulators, DC-DC converters. 9. Basic logic concepts, combination and sequential circuits. 10. TTL and CMOS circuits and their applications. 11. DA and AD converters. 12. Optoelectronics, basic circuits and application. 13. LED and LCD displays. 14. Microprocessors and microcontrollers.

### Requirements, evaluation and grading:

exam

### Required and recommended readings:

U. Tietze, Ch. Schenk: Analóg és digitális áramkörök, Műszaki Könyvkiadó, Budapest, 1998. P. Horowitz, W. Hill: The art of electronics, Cambridge University Press, Cambridge 1993. I.E. Shepherd: Műveleti erősítők, Műszaki könyvkiadó, Budapest, 1985.