



## COURSE DATASHEET

<b>Semester:</b>	2014/15/2
<b>Course:</b>	Mechatronic Systems Laboratory course
<b>Code:</b>	VEMKFIB433M
<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 main objective of the course is to give students hands-on experience with some simple mechatronics systems, their subsystems and parts.

### Course content:

1. Accident prevention 2. Review of the exercises. Preliminary training. 3. Examination of an optocoupler. 4. Transmission of rotary motion by a Cardan joint. 5. Open-loop powering of inductive loads by PWM signal. 6. Acceleration and deceleration of a DC-motor-driven system. 7. Heating and cooling of power electronics parts. 8. Operation and programming of a programmable relay. 9. Examination of stabilized and unstabilized power supplies. 10. Laser engraving by a CNC-driven X-Y table. 11. Tuning of a DC servo amplifier for a linear drive unit. 12. Examination of an analog optical proximity switch. 13. Calibration and application of an LVDT . 14. Programming and application of a PLC. 15. Essay written, 90 minutes.

### Requirements, evaluation and grading:

Fulfill the main tasks in the measurements and provide a written results and analysis.

### Required and recommended readings:

W. Bolton: Mechatronics. Electronic control systems in mechanical and electrical engineering. (Pearson Education, 2008)