



## COURSE DATASHEET

|                                |                                       |
|--------------------------------|---------------------------------------|
| <b>Semester:</b>               | 2015/16/1                             |
| <b>Course:</b>                 | Mechatronics Softwares                |
| <b>Code:</b>                   | VEMKFIB354M                           |
| <b>Responsible department:</b> | Institute of Physics and Mechatronics |
| <b>Department code:</b>        | MKFI                                  |
| <b>Responsible instructor:</b> | dr. Péter Gurin                       |

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### Course objectives:

To acquire the basics of the user level softwares important for Mechatronical engineers in practice.

### Course content:

Basics of the LabVIEW. The virtual instrument.  
Simple data types. Function block diagram. Controls and indicators.  
Derived data types. Programming structures.  
Sequence of operations. Synchronizing.  
Communication with external equipment (RS232, TCP/IP).  
Complex instrument control.  
Basics of the Eagle software.  
Designing circuit boards by Eagle.  
Basic steps of PCB design.  
Generating layer boards.  
Basics of the Multisim software.  
Simulation of simple circuits.  
Simulation of Operational Amplifiers.  
Design and simulation of complex circuits

### Requirements, evaluation and grading:

Students must write two papers in a semester, one paper during the semester and one at the end of it. The final mark is the weighed mean value (rounded) of the two marks received for the two papers. The mark of the second (at the end of the semester) paper is multiplied by two. The mark of the second paper is strictly required to be at least 2, and the mean value of the two papers must be better than 2.00.

### Required and recommended readings:

LabView documentation  
Eagle documenttation  
Multisim documentation