

Name of the course: Devices of mobile and computer games	credits: 2
Type: E-learning material, 8 hours / semester	
Exam type: test, project work	
Timing:	
Prerequisites: none	
<p>Description: This blended-learning course targets to overview the details of the most common controlling technologies, with the help of a high-level simulation software. In our interpretation the simulated model is integrated into a microcontroller-based development board with the most widely used sensors and actuators.</p> <p><u>Thematics:</u> The course's length is 8 hours, and it contains the following elements: Description of the simulation software, integrating MATLAB and μCs, the role of sensors and actuators in controls. A brief overview of sensors and actuators, their grouping according to different aspects. Detailed theoretical and practical demonstration of the used sensors and actuators through practical examples.</p> <p><u>Necessary competencies:</u> Fundamentals of electronics, electronics technology, the knowledge of essential electronics circuit symbols and electronics circuit diagrams, basic designing, and problem-solving skills.</p> <p><u>Acquiring competencies:</u> The solution to a given design task allows to master the following skills: standalone problem solving, system specification; hardware implementation of a given function; to use a new development environment; independent processing of literature; knowledge of parts, use of catalogs; preparing technical documentation, master simulation and programming skills.</p> <p>The grade for the midterm exam is based on a test.</p> <p>Scores for the final grades: 0-50 percent: 1; 51-70 percent: 2; 71-80 percent: 3; 81-90 percent: 4; 91-100 percent: 5.</p>	
<p>Literature: They are published on the relevant Moodle course</p> <p>Additional literature: [1] William C. Dunn. Introduction to Instrumentation, Sensors, and Process Control (Artech House Sensors Library). Artech House Publishers (October 31, 2005). 354 p. ISBN-10: 1580530117, ISBN-13: 978-1580530118 [2] Nathan Ida. Sensors, Actuators, and their Interfaces: A multidisciplinary introduction (Materials, Circuits and Devices). Scitech Publishing (December 12, 2013). 784 p. ISBN-10: 1613530064, ISBN-13: 978-1613530061 [3] Charles Bell. Beginning Sensor Networks with Arduino and Raspberry Pi. Apress; 1st ed. edition (November 22, 2013). 372 p. ISBN-10: 9781430258247, ISBN-13: 978-1430258247, ASIN: 1430258241</p>	
Main lecturer: Bertalan Beszédes	