



COURSE DATASHEET

Semester:	2016/17/1
Course:	System Engineering
Code:	VEMKFOB312R
Responsible department:	Department of Process Engineering
Department code:	MKFO
Responsible instructor:	Dr. János Abonyi

Course objectives:

At the end of the course, students are going to be familiar with the concept of V-model- based product and process development. Project and problem solving oriented learning activity is expected to learn how to use the tools of systems engineering in solving design related problems.

Course content:

Stakeholders, requirement analysis, QFD Conceptual design, TRIZ, Selection, B/C analysis, Multiobjective decision making, Life-cycle analysis, Cost estimation, Decision trees, Risk management- FMEA, Reliability, Process management, Process capability, SPC, SQC, Human aspects of design, OEE - Hauff model, MES

Requirements, evaluation and grading:

Grading is based on a written midterm examination and the written final examination. Students receive assignments connected to an individual design project week by week. The final mark is determined according to following table based on the weighted average of the points obtained for the assignments, the midterm and the final written examination (ratio of midterm and final exam weights=0.3, 0.3/0.4):
% final mark above 85 excellent (5) 75-84 good (4) 65-74 medium (3)
50-64 pass (2) below 50 fail (1)

Required and recommended readings:

Benjamin S. Blanchard, Wolter J. Fabrycky Systems Engineering and Analysis Pearson Prentice Hall, 2006 Abonyi János, Renszermérnöki ismeretek jegyzet (elérhető a moodle e-learning rendszerben), 2014 NASA Systems engineering handbook,
<http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20080008301.pdf>
System engineering toolbox for design-oriented engineers, NASA Reference Publication 1358