Mathematics A3 for Mechanical Engineers (BMETE90AX10)

Lecturer: *Dr. Peter Moson* (www.math.bme.hu, +3614632690, +36309329626). Office: H. building 41. Office hours: Thursday 7-8 a.m.

Prerequisites: Mathematics A1, A2.

Detailed program:

Classification of differential equations. Separable ordinary differential equations, linear equations with constant and variable coefficients, systems of linear differential equations with constant coefficients. Some applications of ODEs. Scalar and vector fields. Line and surface integrals. Divergence and curl, theorems of Gauss and Stokes, Green formulae. Conservative vector fields, potentials. Some applications of vector analysis. Software applications for solving some elementary problems. (4 hours/4 credits)

Literature:

Thomas' Calculus by THOMAS, G.B. et al. Addison-Wesley, Several editions. (ISBN0321185587)

K.F.RILEY,M.P.HOBSON,S.J.BENCE. Mathematical methods for physics and engineering. Cambridge University Press 1998 (reprinted 2000). (ISBN 0 521 55529 9 paperback)

Grading system:

There will be 2 mid-term tests. The mark will be calculated: 2*50% from the tests. The planned dates of the midterm tests: October 11, November 15, 2015. Marks: 0-39 fail (1), 40-54 pass (2), 55-69 satisfactory (3), 70-84 good (4), 85- (excellent (5). If 5% or less is missing to a better mark then an oral exam can improve it.

> ***Good Luck, Have a Nice Semester!***