



Differential Equations – Spring 2009

Subject Code: AMAT 204

Number of periods per week: 3

Number of total weeks: 13

Office: Room 203, New Building

Office Hours: Monday 14:00-15:00, Tuesday 13:00-14:00, Thursday 13:00-15:00

Lecturer: Panagiota Konstantinou

Email: eng.kp@fit.ac.cy

Tel: 22431355 Ext. 195

Course Outline:

- Ordinary Differential Equations (First Order): Basic Concepts and Classification of Differential Equations, Separate, Linear Integrating Factor, Exact First-Order ODE, Application of First-Order Differential Equations.
- Ordinary Differential Equations (Second and nth-Order): Linear Homogeneous with constant Coefficients, Nth-Order Linear Homogeneous with Constant Coefficients, The Method of Undetermined Coefficients, Variation of Parameters, Initial Value Problems, Applications of Second Order Linear ODE with Constant Coefficients.
- Laplace Transform: Definition and Properties, Partial Fractions and Inverse Laplace Transform, Solution of Linear Differential Equations with Constant Coefficients.
- Partial Differential Equations: Basic Concepts and Classification, Separation of Variables.
- Applied Engineering Problems using MATLAB

Assessment:

- Final exam 60%
- Coursework 40%
 - Test 1 19/3/09 50% of coursework
 - Test 2 14/5/09 50% of coursework

Note: The passing mark is 50%.

Textbooks:

- Paul Davis, “Differential Equations, Modeling with Matlab” Prentice Hall, 1999

References:

- Kent R. Nagle, et al Fundamentals of Differential Equations, 1999
- R. Bronson, Modern Introductory Differential Equations, Schaum's Outline Series
- R. C. McLann, Introduction to Ordinary Differential Equations, Harcourt Brace Jovanovich
- Advanced Engineering Mathematics, Erwin Kreyszig, John Wiley & Sons, 8th Edition, October 1998.
- K.A. Stroud, Engineering Mathematics, 5th Edition, Palgrave, 2001

Prerequisites:

- Calculus II, AMAT 122
- Linear Algebra with MATLAB, AMAT181