Syllabus   IEEM206   Differential Equations (微分方程)   2010/09

Time: Wednesday 15:20 – 18:10   Room: 102, Industrial Engineering Building

Instructor: TA:

Professor Wei-Chang Yeh   Chi-Ming Huang (黃啟明)

e-mail: wcyeh@ie.nthu.edu.tw   e-mail: d937803@oz.nthu.edu.tw

Office: 821, Industrial Engineering Building Tsung-Jung Hsieh (謝宗融)

                                             e-mail: xx20928@hotmail.com

                                             Phone: 33947   Office: Lab 710

Course Descriptions

This course is to study methods for obtaining solutions to elementary differential equations including first-order and higher-order differential equations. Moreover, power series solutions and numerical methods for solving differential equations will be also discussed and some applications of differential equations will be introduced in class.

Text Books

C Henry Edwards & David E. Penney, Elementary Differential Equations with Boundary Value Problems, 6th. Ed. Pearson International Edition, 2009.

References

D.W. Jordan and P. Smith, Mathematical Techniques-An Introduction for the Engineering, Physical, and Mathematical Sciences, Oxford University Press, 1994.

Quizzes

A half an hour quiz usually is given on class. Exceptions such as during test weeks, will be announced. Quizzes are closed notes and closed book. No make-up quizzes are given for any reason, but the two lowest quizzes grades will be dropped.

Grading

Homework	15%
Quiz	15%
Midterm 1	20%
Midterm 2	20%
Final Exam	30%

Schedule(Tentative)

Date	Topic	Chapter
09/15	Introductions	N/A
09/22	No class	N/A
09/29	First-Order Differential Equations	Ch.1
10/06	Linear Equations of Higher Order	Ch.2
10/13	Linear Equations of Higher Order Power Series Methods	Ch.2~Ch.3
10/20	Power Series Methods	Ch.3
10/27	Midterm 1	Ch.1~ch.3
11/03	Laplace Transform Methods	Ch.4
11/10	Laplace Transform Methods Linear Systems of Differential Equations	Ch.4~Ch.5
11/17	No Class	N/A
11/24	Linear Systems of Differential Equations	Ch.5
12/01	Numerical Methods	Ch.6
12/08	Midterm 2	Ch.4~Ch.6
12/15	Nonlinear Systems and Phenomena	Ch.7
12/22	Fourier Series Methods	Ch.8
12/29	Fourier Series Methods Eigenvalues and Boundary Value Problems	Ch.8~Ch.9
01/05	Eigenvalues and Boundary Value Problems	Ch.9
01/12	Final exam	Ch.7~ch.9