MATH 256
DIFFERENTIAL EQUATIONS: OUTLINE

Session 2014W, Term 1 (Sep-Dec 2014)

http://www.math.ubc.ca/∼jcwei/MATH256-2014.html

Description: From the UBC Calendar: "Linear ordinary differential equations, Laplace transforms, Fourier series and separation of variables for linear partial differential equations."

Topic prerequisites: Linear algebra including eigenvalues of matrices (MATH 152); Integral calculus including some ordinary differential equations (e.g. MATH 101); Some multivariable calulus including partial derivatives (e.g. MATH 200)

Instructor:

- Session 102: Every Mon, Wed, Fri, 10;00-11:00, Room: Hennings 201, Instructor: Duncan Hewitt. E-mail: dhewitt@math.ubc.ca

- Session 103: Every Mon, Wed, Fri, 14:00-15:00, Room:Math 100; Instructor: Juncheng Wei, Math Annex 1224, Tel. 604-822-6510, E-mail: jcwei@math.ubc.ca

Objectives: This course is intended for analytical methods in solving ordinary (ODEs) and partial differential equations (PDEs). The focus is on the analytical techniques. Very few proofs will be involved.

Textbook : W.E. Boyce and R.C. DiPrima, *Elementary Differential Equations and Boundary Value Problems,* Wiley (10th Edition, 2012; or any Edition)

Topics

- First order ordinary differential equations [Chapter 1, 2]

- Second order ordinary differential equations [Chapter 3]

- Systems of first order linear ordinary differential equations [Chapter 7]

- The Laplace transform [Chapter 6]

- Partial differential equations and Fourier series [Chapter 10]

- If time permits: Boundary value problems and eigenvalue problems [Chapter 11]

Grading

Your grade will be determined by the following formula:
Grade (100/100)= Final exam (50/100)+ Two midterm exams (40/100)+ Homework (10/100)

Exam Schedule

- Midterm Exam I. Friday, Oct. 3. Covers Chapter 1, 2, and 3

- Midterm Exam II. Monday, Nov. 17. Covers Chapter 7 and 6

- Final Exam. Covers all topics

Homepage

There will be 10 assignments which will be posted on my (or your instructor's) web page: www.math.ubc.ca/∼jcwei, www.math.ubc.ca/∼dhewitt.

Lecture notes, assignments, solutions to assignments and examinations will be posted on my (or your instructor's) web when they are ready.

Office Hours:

TBA

Final Remark: Any questions? Please send me an email or drop by my office Math Annex 1224.