

MATH3FF3 (Partial Differential Equations I) - Winter2007

Instructor: Dr. Mani Mehra

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Time & Place: Monday, Thursday, 15:30 - 16:20, Tuesday, 16.30-17.20 in BSB/106

Office hours: 12:20 - 13:30 Monday

Please check the web page weekly for more details and announcements.

Purpose of the course

The course covers mathematical analysis of partial differential equations, with emphasis on analytical solutions of first-order and second-order linear equations. Lectures contain both the results and the derivations, while assignments include analytical problems of different levels.

Topics

First order equations, well-posedness, characteristics, wave equation, heat equation, Laplace equation, boundary conditions, Fourier series and applications.

Topics with the section wise detail of the book will be updated weekly. Please check the web page for current updates weekly. The numbers in italic will refer to sections of the textbook by Walter A Strauss, otherwise book name will be indicated.

Text

Primary Reference:

- “Partial Differential Equations: an Introduction” by Walter A. Strauss (Jhon Wiley & Sons)

Supplemental Reference:

- “Elementary Applied Partial Differential Equations” by R Haberman (Prentic Hall)
- “Fourier Series and Boundary Value Problems” by J. W. Brown and R. V. Churchill (McGraw-Hill)

course webpage

<http://www.math.mcmaster.ca/~mmehra/MATH3FF3/math.html>

Assignments

Five assignments will be posted on the web site. The solutions will also be posted on the course webpage. Check the announcements on webpage for posting and due dates of assignments.

Test

The date and location will be announced later.

Final Exam

The course will be completed by a three-hour final examination. The date and location of the final exam will be announced by the Registrar's office in mid-term.

Marking Scheme

- a) Final exam (3 hrs) - 50%
- b) Test (50 min) - 25%
- c) Five homework assignment - 25%

I reserve the right to change the weight of any portion of the marking scheme. If changes are made, your grade will be calculated using the original weighting and the new weighting, and you will be given the higher of all grades.

Policy Reminders

Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office. Any student who infringes one of these resolutions will be treated according to the published policy.