Math 251 Exam 2 information

- The Exam is scheduled as March 22 and it will be given during the regular class time.

- The exam covers sections 12.6,12.7, 13.2-13.6, 13.8, 13.9-13.10(the cylindrical coordinates case only)

- It is advised that you

  - read over the lecture notes;

  - work the quizzes;

  - work the Week In Review problems

  - work the suggested and webassign homework problems.

  - solve the Extra Practice problems (remember that it doesn't cover all the material and it is not sufficient to solve only it before the test);

- Concepts to know:

  - Directional derivative of function of TWO variables, gradient and its significance (including maximum value of the directional derivative or maximum rate of change).(12.6)

  - Directional derivative of function of THREE variables, gradient and its significance (including maximum value of the directional derivative or maximum rate of change), tangent planes to level surfaces and normal line.(12.6)

  - Local maximum and minimum values; critical point, saddle point, second derivatives test. (12.7)

  - Absolute maximum and minimum values, extreme values theorem for functions of two variables (12.7)

  - Double integral over a rectangle, iterated integral and Fubini Theorem (13.2)

  - Evaluating double integrals, regions of types I and II. (13.3).

  - Volume, properties of double integrals (13.3)

  - Polar coordinates, conversation from rectangular to polar coordinates in a double integral (13.4-13.5)

  - Mass and center of mass of a lamina (13.6)

  - Triple integral, solid regions of types I, II and III

  - Volume and mass of a solid region (13.8)

  - Cylindrical coordinates (13.9)

  - Triple integral in cylindrical coordinates (13.10)