

## Second Midterm – Information

TIME: Thursday, February 17, 1-2:15pm.

PLACE: In class, B131. If you have a McBurney VISA then you should go to Van Vleck 903 at 1pm.

WHAT'S ON THE TEST?

- All material covered in weeks 1-9 of the course and the corresponding assignments.
- All material covered in Sections 13.1, 13.3-4, 14.1-8, 14.10, 15.1-15.4 of the textbook
- You should be able to state the important definitions and theorems.
- Besides the topics listed on the previous information sheet, you should be able to solve the following types of problems (not an extensive list!):
  - Finding local extreme values and saddle points using the first and second derivative test.
  - Finding extreme values with a constraint using the Lagrange multipliers method.
  - Finding extreme values on a closed and bounded domain.
  - Finding the Taylor expansion of a two-variable function, determining the linear/quadratic/cubic approximation near a point, estimating the error in the approximation.
  - Computing double integrals using single variable integrals.
  - Finding regions of integration for double integrals, reversing the order of integration.
  - Finding the area, moments, center of mass of a thin plate with a certain shape and density.
  - Computing double integrals using polar coordinates.
  - Computing triple integrals in rectangular coordinates (finding the region of integration, changing the order of the integration).