# Math 281  Several Variable Calculus I
## Winter 2014    CRN 24935

**PART I. GENERAL INFORMATION**

**1. Classroom and Meeting Time**:   FEN 117; MTWF 08:00am-08:50

**2. Text Book**:   James Stewart, Multivariable Calculus (7th ed.)

**3. Instructor**:   Peng Lu

**4. Office Hours**:   MWF 10:00am-10:50

**5. Office and Phone Number**:   Deady Hall 304; 346-4727

**6. Email Address**:   penglu@uoregon.edu

**7. Web Page**:   http://blackboard.uoregon.edu/
                              http://webwork.uoregon.edu/

**8.  Learning Outcome**: Understand the geometry of space (cross product, dot product, projection formula, equations of lines and planes), understand the basic quadratic surfaces (paraboloids, hyperboloids of one sheet, hyperboloids of two sheets, ellipsoids, cylinders), be able to compute partial derivatives, obtain the best linear approximation, determine the tangent plane. Students should be able to compute with and apply the chain rule, compute directional derivatives, and understand Taylor and Maclaurin series. Students should understand the geometry of the gradient - the gradient points in the direction of maximal increase and minus the gradient points in the direction of maximal decrease - at a local minima or maxima the gradient vanishes (i.e. the function has a critical point). Students should be able to apply the second derivative test (Hessian) to find label a critical point as a local minima, local maxima, saddle point, etc. Students should be able to solve problems involving the methods of Lagrange multipliers to find local minima and maxima of functions subject to constraints.

**9.  Special Accommodation**: If you are a student with a documented disability please meet with me soon to discuss your needs. If you have not already requested a notification letter from Disability Services outlining recommended accommodations, please do so soon.


**PART 2. HOMEWORKS and EXAMS**

**1. Homeworks**:   About nine homework will be given through WebWork, each homework will be open for about a week.

**2. Exams**:   Two in-class exams and one final exam
                       **Graphing calculators are allowed**
                       **No makeup for tests unless there is a doctor's note**

**3. Grade**:   Homework: 10%; Each test: 25%; Final exam: 40%

**4. Important dates**:

       **Exam 1: Tuesday, January 28, 2014 in class;**
       **Exam 2: Tuesday, February 25, 2014 in class;**
       **Final Exam: 10:15am-12:15 Thursday, March 20, 2014**

       **You must bring photo ID to all the exams**


## PART III. OUTLINE AND ASSIGNMENTS

**Week 1**: January 06 to 10 (§12.1, 12.2, 12.3)
    Homework on WebWork: Week1Wint2014

**Week 2**: January 13 to 17 (§12.4, 12.5, 12.6)
    Homework on WebWork: Week2Wint2014

**Week 3**: January 20 to 24 (§12.6, 13.1)
    Homework on WebWork: Week3Wint2014

**Week 4**: January 27 to 31 (§13.2)
    **Review on Monday; First exam on Tuesday**
    Homework on WebWork: Week4Wint2014

**Week 5**: February 03 to 07 (§13.3, 13.4)
    Homework on WebWork: Week5Wint2014

**Week 6**: February 10 to 14 (§14.1, 14.2)
    Homework on WebWork: Week6Wint2014

**Week 7**: February 17 to 21 (§14.3, 14.4)
    Homework on WebWork: Week7Wint2014

**Week 8**: February 24 to 28 (§14.5, 14.6)
    **Review on Monday; Second exam on Tuesday**
    Homework on WebWork: Week8Wint2014

**Week 9**: March 03 to 07 (§14.6, 14.7, 14.8)
    Homework on WebWork: Week9Wint2014

**Week 10**: January 20 to 24 (§14.8)
    No homework    **Review for Final Exam**