

# Math 281 Several Variable Calculus I

## Fall 2021 CRN 13987

### PART I. GENERAL INFORMATION

- 1. Classroom and Meeting Time:** Univ H. 205; MTWF 08:00am-08:50
- 2. Text Book:** James Stewart, Multivariable Calculus (8th ed.)
- 3. Instructor:** Peng Lu
- 4. Office Hours:** MWF 10:00am-10:50
- 5. Office and Phone Number:** Univ H. 304; 541 346 4727
- 6. Email Address:** penglu@uoregon.edu
- 7. Web Page:** <https://canvas.uoregon.edu/>  
<https://webwork2.uoregon.edu/>
- 8. Learning Outcome:** Understand/can-do the following:
  - geometry of space (cross product, dot product, projection formula, equations of lines and planes);
  - basic quadratic surfaces (paraboloids, hyperboloids of one sheet, hyperboloids of two sheets, ellipsoids, cylinders);
  - computing partial derivatives, obtaining the best linear approximation, determining the tangent plane.;
  - computing with and applying the chain rule, and computing directional derivatives.
  - geometry of the gradient, at a local minima or maxima the gradient vanishes (i.e. the function has a critical point).
  - applying the second derivative test (Hessian) to find critical points and to label them as a local minima, local maxima, saddle point, etc.
  - solving 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 reason arguing for special accommodations, please meet with me soon to discuss your needs. If you have not already requested a notification letter from Accessible Education Center, 541-346-1155, uoaec@uoregon.edu outlining recommended accommodations, please do so soon.

### PART 2. HOMEWORK and EXAMS

- 1. Homework:** About nine homework will be given through WebWork2, 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 documented reason**
- 3. Grade:** Homework: 15%; Each test: 25%; Final exam: 35%
- 4. Important dates:**  
**Exam 1: Tuesday, October 19, 2021 in class;**  
**Exam 2: Tuesday, November 16, 2021 in class;**  
**Final Exam: 10:15am-12:15 Tuesday, December 07, 2021**  
**You must bring photo ID to all the exams**

### **PART III. OUTLINE AND ASSIGNMENTS**

**Week 1:** September 27 to October 01 (§12.1, 12.2, 12.3)

Homework on WebWork2: Week1Fall2021

**Week 2:** October 04 to 08 (§12.4, 12.5, 12.6)

Homework on WebWork2: Week2Fall2021

**Week 3:** October 11 to 15 (§12.6, 13.1)

Homework on WebWork2: Week3Fall2021

**Week 4:** October 18 to 22 (§13.2)

**Review on Monday; First exam on Tuesday**

Homework on WebWork2: Week4Fall2021

**Week 5:** October 25 to 29 (§13.3, 13.4)

Homework on WebWork2: Week5Fall2021

**Week 6:** November 01 to 05 (§14.1, 14.2)

Homework on WebWork2: Week6Fall2021

**Week 7:** November 08 to 12 (§14.3, 14.4)

Homework on WebWork2: Week7Fall2021

**Week 8:** November 15 to 19 (§14.5, 14.6)

**Review on Monday; Second exam on Tuesday**

Homework on WebWork2: Week8Fall2021

**Week 9:** November 22 to 26 (§14.6, 14.7, 14.8)

Homework on WebWork2: Week9Fall2021

**Week 10:** November 29 to December 03 (§14.8)

No homework **Review for Final Exam**

#### **PART IV. Some Remarks**

(i) Though the WeBWork assignments are submitted online for final answers only, it is crucial that you work out answers first on a piece of paper with all steps, this helps you internalize the learning.

(ii) Group work on homework is encouraged.

(iii) Time now are rough as we all know, but I plan to run the class as close to my teaching before 2020 as possible (attempting to normalize our life).

(iv) Finally I would like to thank you for registering in this class. You take good care of yourself.