清華大學數學系
高等微積分二　**Advanced Calculus (II)**

Math 2020-02 Spring 2009

Chapter 6. Differentiation on R^n
6.1. Partial and total derivatives (2/24, 2/27)
6.2. Product rule and chain rule (3/3)
6.3. Gradients and tangent planes (3/6)
6.4. Mean value theorem (3/10)
6.5. Taylor's theorem (3/13, 3/17)
6.6. Maxima and minima (3/20, 3/24)

Chapter 7. Inverse Function Theorem and Applications
7.1. Inverse function theorem (3/27, 3/31)
7.2. Implicit function theorem (4/7, 4/14)
7.3. Domain and range straightening (4/21)
7.4. The Morse lemma (4/24)
7.5. Lagrange multipliers (4/28)

Chapter 8. Integration on R^n
8.1. Integrable functions (5/1, 5/5)
8.2. Volume and sets of measure zero (5/8)
8.3. Lebesgue's theorem (5/12)
8.4. Properties of integrals (5/15, 5/19)
8.5. Improper integrals (5/26)
8.6. Iterated integrals and Fubini's theorem (6/2, 6/5)
8.7. Change of variables (6/9, 6/12)
8.8. Cylindrical and spherical coordinates (6/15)

Midterm Exam 1 (Friday, April 10): Chapter 6, Sections 7.1
Midterm Exam 2 (Friday, May 22): Sections 7.2 ~ 7.5, Sections 8.1 ~ 8.3
Final Exam (Tuesday, June 23): Chapter 6 ~ Chapter 8