

COURSE OUTLINE

Math 184, Section 201, 2014W Term 2 January-April, 2015

Grading scheme.

- Final exam: 50%
- Midterms: 25%
- Workshops: 10%
- WebWork homework: 10%
- In-class quizzes: 5%

Textbook. The required textbook for this course is *Calculus: Early Transcendentals with student solutions manual*, Volume 1. Fourth custom edition for UBC, by Briggs, Cochran and Gillett. The textbook is available at the UBC Bookstore. ISBN 10 digit: 1-269-91047-7. ISBN 13 digit: 978-269-91047-7. This book is available at the UBC Bookstore.

Note that there may be differences in page number references and problem numbering between different editions if you use a different edition of the Briggs, Cochran and Gillett textbook. It is up to you to deal with any such potential inconsistencies if you use a different edition of the text.

Weekly schedule. Topics are subject to slight changes. Sections refer to the textbook unless otherwise noted. Supplementary course notes can be found in <http://www.math.ubc.ca/~kliu/common104.html>

- Week 0. Introduction: Review of Exponentials, Logarithms, and Inverse Functions. Chapter 1.3
- Week 1. A standard business problem from managerial economics. (Online notes). An Introduction to Limits. Chapter 2.1, 2.2, and 2.3 (to the end of Quick Check 3 on p. 74)
- Week 2. Continuous Functions. Chapter 2.6 (to p. 101 plus the intermediate Value Thm). The Derivative. Chapter 3.1, 3.2
- Week 3. Rules of Differentiation. Chapter 3.3, 3.4. Chapter 3.5: only the table of derivatives Theorem 3.13 on p. 167. (We return to this section at the end of the course.)
- Week 4. Derivative as rate of change. Chapter 3.6. The Chain Rule. Chapter 3.7
- Week 5. Implicit Differentiation. Chapter 3.8 to the end of the section on Slopes of Tangent Lines, plus material on the power rule with rational exponents. Derivatives of Logarithms and Exponentials. Chapter 3.9

- Week 6. Derivatives of Logarithms and Exponentials Continued. Chapter 3.9. Applications: Elasticity of Demand (Notes to be posted online). Exponential Growth and Compound Interest. (Chapter 6.8 to the end of Example 3 plus online notes)
- Week 7. Related Rates. Chapter 3.11. Maxima and Minima. Chapter 4.1
- Week 8. Information in the first and second derivatives. Chapter 4.2. Asymptotes from Chapter 2.5. Graphing functions. Chapter 4.3
- Week 9. Optimization problems I. Chapter 4.4
- Week 10. Optimization Problems Continued. Chapter 4.4. Linear Approximation. Chapter 4.5
- Week 11. Approximating Functions with polynomials. Chapter 9.1
- Week 12. Approximating Functions with polynomials Continued Chapter 9.1. Inverse Trigonometric Functions. Chapter 3.10