Mathematics 1100-7: Quantitative Analysis

Fall 2001

Text: R. Harshbarger and J. Reynolds, *Mathematical Applications for Management, Life, and Social Sciences,* 6th edition
Meeting time and place: Tuesdays and Thursdays, 7:15–8:45, in LS 102
Final exam: Tuesday, December 11, 8:30–10:30pm in LS 102
Prerequisites: Math 1090 or equivalent
Course homepage: `www.math.utah.edu/~ptrapa/1100/1100.html`

Instructor: Professor Peter Trapa
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Office Hours: Tuesdays and Thursdays 6:15–7:15 and 8:45–9:30, and Wednesdays by appointment

Homework and quizzes. Corresponding to each section in the book that we cover, I will provide you with a list of homework problems. It is expected that you attempt all problems and that you read the section of the text from which the problems are taken. Each Tuesday will begin with a 10 minute quiz consisting of one or two problems taken directly[1] from the homework corresponding to the previous two lectures. (At the end of each Thursday lecture, I will explicitly state the sections that the quiz will cover.) No make-ups will be given; if you miss a quiz your score is entered as a zero. You get to drop your lowest quiz score — see the grading section below.

Hour Exams. There will be two hour-long exams during the course. The tentative content of each exam is explained in the attached outline. Because I have not taught 1100 before, it is difficult for me to gauge the exact pace of the lectures, so it's not possible for me to specify the exact date of the hour exams ahead of time. However, I will always give you at least a week's notice for upcoming exams.

Final Exam. The final exam is a two hour comprehensive exam. Roughly half of the final will be devoted to the material covered after the second hour exam. The other half will be drawn from the material covered by the hour exams.

Grading. Quizzes (after dropping your lowest score) count towards 20% of your grade, each hour exam counts 20%, and the final exam counts 40%. After each exam, I'll announce what score constitutes a particular letter grade. This, together with the weekly quizzes, should provide you with enough feedback to gauge your own performance in the class. If at any point during the term you feel unclear about how you're performing, please make an appointment with me so that I can clarify any confusion.

[1] But I reserve the right to change some numbers in the homework problem. For instance, if the homework problem was 'Solve $2x + 4 = 10$,' the quiz might be 'Solve $3x + 2 = 11$.'

Calculators. In this course, calculators are intended to be used only to perform simple numerical computations. Because the course homework deals with a large number of applications which often involve numbers drawn from actual data sets, calculators may be useful in crunching numbers. This should be done only at the final step of your solution. You should get used to working a problem to produce an answer like

$$\frac{\sqrt{2} + e^{0.98}}{\log_{10} 6},$$

and then (and only then) computing the actual numerical value using a calculator. On quizzes and exams, students must show all work. Answers giving only a numerical value (even correct ones) without a clear exposition of the intermediate steps will receive little or no credit. Quiz and exam problems will be designed so that there is absolutely no advantage to having a particular kind of calculator (such as a graphing calculator). In fact, on most quizzes calculators will not be necessary, in which case their use will not be allowed.

Tutoring Center. The math department offers free drop-in tutoring for many classes, including 1100. The tutoring center is located in Mines 210, and is open from 8am–8pm, Monday through Thursday, and 8am–2pm on Fridays. The center opens for the Fall term on August 29. Visit their website (`http://www.math.utah.edu/ugrad/tutoring.html`) for more details.

ADA Statement. The American with Disabilities Act requires that reasonable accommodations be provided for students with physical, sensory, cognitive, systemic, learning, or psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations for the course.

Math 1100-7: outline and homework

Material for Exam 1:

Review of 1090 material (2.5 Lectures). Homework:
§1.2: 13(a)–(d), 14(a)–(d), 27–30, 53
§1.3: 17, 21, 25, 29, 36,
§1.5: 7, 10, 12, 14, 19, 43
§1.6: 5, 16, 21, 22
§3.3: 15, 17, 21, 25
§2.2: 9, 13, 14, 40, 45
§5.1: 13, 16, 31
§5.2: 5, 6, 7, 8, 19–33odd, 55, 56
§5.3: 3, 10, 19, 33
§6.2: 16, 19, 23, 24, 25, 63–66, 72

Derivatives (Chapter 9.1–9.8; 4 Lectures). Homework:
§9.1: 1–12, 15–18, 27–35odd, 39, 40, 56, 67, 68,
§9.2: 1–14, 15–21odd, 31–37odd, 44, 50, 51, 56
§9.3: 3, 4, 5, 9, 10, 12, 13, 19, 27, 28, 31, 39, 45
§9.4: 1–9odd, 10, 12, 13, 15, 18, 19, 21, 23, 26, 27, 30, 48, 51
§9.5: 1, 3, 4, 9, 11, 15, 16, 17, 21, 23, 26, 27, 29, 45, 49, 53
§9.6: 3, 4, 5–11, 13, 15–17, 21, 23, 24, 26, 27, 47
§9.7: 5, 9, 13, 17, 18, 24, 25, 29, 30, 34
§9.8: 1, 4, 5, 8, 13, 16, 19, 24, 39, 40

More Derivatives (11.1–11.4; 2 Lectures). Homework:
§11.1: 1–9odd, 10, 12, 13, 17, 18, 22, 23, 27, 30, 33, 43, 47
§11.2: 1, 3, 4, 5, 10, 13, 17, 22, 24, 25, 27, 28, 33, 43, 45, 52, 57
§11.3: 3, 5, 6, 9, 11, 13, 16, 17, 21, 22, 23, 25, 30, 33, 34, 41, 42, 47, 49, 51, 59, 62
§11.4: 11, 12, 14, 15, 19, 20, 25, 31, 36, 38

Material for Exam 2:

Application of Derivatives (Chapter 10, 9.9, 11.5; 4 Lectures). Homework:
§10.1: 1–11odd, 17, 23–31odd, 35, 47
§10.2: 1–15odd, 19, 21, 29
§10.3: 3, 5, 7, 11, 15, 17, 19, 21, 25
§10.4: 5, 11, 13, 15, 17, 19, 21, 25
§10.5: 1–7odd, 17, 19, 21, 37
§9.9: 3–11odd, 16, 23–27odd
§11.5: 1, 5, 7, 15, 17

Indefinite Integrals (Chapter 12; 3 Lectures). Homework:
§12.1: 1–29odd, 41, 43, 45
§12.2: 1–27odd, 31, 39, 43
§12.3: 1–27odd, 41, 45
§12.4: 5, 7, 9, 15, 21, 23
§12.5: 1, 3, 11, 13, 15, 17, 19, 21, 23, 25, 37, 39

Additional material for final exam:

Definite Integral (Chapter 13.1–13.4; 3 Lectures). Homework:
§13.1: 1, 3, 9, 11–19odd, 23
§13.2: 1–25odd, 31, 33, 35, 41, 43
§13.3: 1–15odd, 21
§13.4: 3, 5, 9, 11, 27, 29, 31
§13.7 1–19odd

Functions of Two or More Variables (Chapter 14; 4 Lectures). Homework:
§14.1: 1–25odd, 35
§14.2: 1–25odd, 31, 35, 41, 45, 49
§14.3: 1, 3, 7, 11, 13, 15, 23, 25
§14.4: 1, 3, 5, 7, 9
§14.5: 1, 3, 5, 15, 16