

Math 2250 – Calculus for Science and Engineering Summer 2007

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Office Hours: MW: 2:00 pm – 4:00 pm

Web Site: www.math.uga.edu/~platt/Links/math2200.html

Class Room: Life Sciences, Room C112

Time: MWF 9:15am – 10:15 am

TR: 9:15 am – 11:30 am

Text: Hass, Weir, and Thomas,
University Calculus

Content: We will cover chapters 2-5 of Hass, Weir, and Thomas, *University Calculus*. See the back of the syllabus for the list of topics covered and the suggested homework problems for each section.

Grading: Grading will be based on the following:

| | | |
|-------------|-------------------|-----|
| Homework: | 200 points | 25% |
| Exams: | 400 points | 50% |
| Final Exam: | <u>200 points</u> | 25% |
| Total: | 800 points | |

Grades will be assigned based on percentage as follows:

| | | | |
|---------------|---------------|---------------|--------------|
| A: 92% - 100% | B+: 86% - 88% | C+: 76% - 78% | D: 60% - 66% |
| A-: 89% - 91% | B: 82% - 85% | C: 70% - 75% | F: 0% - 59% |
| | B-: 79% - 81% | C-: 67% - 69% | |

Homework: I will use WeBWorK for assigning and submitting homework online. The website where you can log on to WeBWorK is https://webwork.math.uga.edu/webwork2/Math2250_Platt/. Your password is initially set as your student number, but you can change it once you log on. Homework will be due before midnight three class days after it is assigned. Once the due date is passed, you will no longer be able to work on it. The homework will count 200 points toward your grade. I have also put some suggested homework, along with the schedule, on the back of the syllabus. These problems are similar to the ones assigned on WeBWorK. You should do as many of them as you need to in order to increase your skill and understanding of the subject. We will go over some of these in class.

Exams: There will be four 100 point in-class exams during the semester. Questions on the exams will test for understanding of the concepts and ability to do the applications. The questions will be similar to the homework problems as well as concepts we discuss in class.

Final Exam: The final exam is comprehensive and is worth 200 points. It will be roughly twice as long as one in-class exam. It is scheduled for August 2, 2007 from 8am to 11am. It will most likely be in our regular classroom, but any changes will be announced in class.

Office Hours: I will be in my office during my office hours and you can drop by during those times whenever you need to discuss homework or if you need additional clarification of something discussed in class. If you can't make the assigned times, feel free to set up an appointment with me.

Other: I reserve the right to make any necessary changes to this syllabus, and will announce any changes to the class.

Academic Honesty: All students are responsible for knowing the University's policy on academic honesty. All academic work submitted in this course must be your own unless you have received my permission to collaborate. It is my responsibility to uphold the University's academic honesty policy and report my suspicions of dishonesty to the Office of the Vice President for instruction.

| Date | Sec | Topic | Homework |
|---------|-------------|--|--|
| June 7 | 2.1 2.2 | Rates of Change and Tangents to Curves Limit of a Function and Limit Laws | pp. 61—62: 1, 3, 7, 8, 11, 12, 15, 19 p. 71: 1, 2, 3, 5, 9, 13, 19, 21, 22, 25, 27 |
| June 8 | 2.2 | Limit of a Function and Limit Laws | pp. 72—74: 29, 34, 35, 36, 39, 42, 49, 57, 64, 68, 69, 85 |
| June 11 | 2.4 | One-Sided Limits and Limits at Infinity | pp. 94—96: 1, 2, 7, 10, 12, 17, 19, 20, 39, 51, 55 |
| June 12 | 2.4 2.5 | Trigonometric Limits Infinite Limits and Vertical Asymptotes | pp. 94—96: 21, 23, 25, 27, 34, 35, 43, 47, 49, 69, 74 pp. 102—03: 1, 3, 9, 13, 14, 17, 18, 19, 23, 31, 35, 39, 42, 43, 44 |
| June 13 | 2.6 | Continuity | pp. 113—14: 1-12, 13, 19, 25, 35, 36, 39, 46, 47, 58 |
| June 14 | 2.7 | Tangents and Derivatives at a Point | p. 118: 1, 5, 7, 11, 13, 18, 23, 27, 28, 29, 30 p. 122: 4, 5, 6 |
| June 15 | 3.1 | The Derivative as a Function Review | pp. 132—33: 1, 3, 6, 9, 10, 13, 17, 27-30, 31, 33, 43, 44 |
| June 18 | | EXAM I | |
| June 19 | 3.2 | Differentiation Rules | pp. 144—46: 1, 3, 5, 7, 9, 11, 17, 18, 21, 23, 24, 27, 28, 29, 33, 35, 39, 43, 47, 49, 50, 53, 58, 62, 63 |
| June 20 | 3.3 | The Derivative as a Rate of Change | pp. 153—54: 1, 5, 7, 10, 11, 15, 17 |
| June 21 | 3.3 3.4 | The Derivative as a Rate of Change Derivatives of Trigonometric Functions | pp. 155--57: 18, 21, 23, 26, 29 pp. 162--63: 1, 5, 8, 9, 11, 13, 16, 20, 27, 35, 37, 47 |
| June 22 | 3.5 | The Chain Rule | pp. 173--74: 1, 3, 5, 9, 11, 15, 17, 19, 24, 27, 31, 35, 41, 45, 47, 50 |
| June 25 | 3.5 | Parametric Equations | pp. 174--75: 51, 55, 57, 59, 71, 72, 73, 81, 83, 86, 95, 99, 112, 115 |
| June 26 | 3.6 3.7 | Implicit Differentiation Derivatives of Inverse Functions | pp. 181--83: 1, 5, 11, 17, 19, 25, 39, 44, 51 p. 192: 3, 11, 13, 21, 25, 27, 29, 32, 41, 51 |
| June 27 | 3.7 3.8 | Derivative of Logarithms Inverse Trigonometric Functions | pp. 192--93: 57, 61, 64, 65, 91, 93, 95, 98 pp. 199--200: 1, 3, 7, 21, 23, 30, 33, 34, 42, 43, 48, 54 |
| June 28 | 3.9 | Related Rates Review | pp. 205--07: 1, 2, 3, 5, 7, 9, 10, 11, 13, 14, 15, 17, 18, 19 |
| June 29 | | EXAM II | |
| July 2 | 3.9 | Related Rates | pp. 207--08: 22, 23, 25, 30, 31, 35 |
| July 3 | 3.10 4.1 | Linearizations and Differentials Extreme Values of Functions | pp. 218—20: 3, 8, 11, 15, 16, 39, 43, 45, 53, 54, 56, 61, 62, [65] pp. 234—35: 6, 8, 19, 20 pp. 243—44: 1—14, 15, 17, 19, 21, 25, 27, 29, 31, 33 |
| July 4 | | Independence Day | |
| July 5 | 4.1 4.2 | Extreme Values of Functions The Mean Value Theorem | pp. 244—45: 39, 41, 43, 49, 51, 55, 61, 66, 67, 70, 72 pp. 252—53: 5, 6, 7, 9, 12, 13, 15, 19, 23, 25, 27, 31, 35, 39, 41, 45, 46, 59, 66a |
| July 6 | 4.3 | The First Derivative Test | pp. 258—59: 1, 3, 5, 7, 9, 13, 17, 21, 25, 31, 43, 47, 49, [58] |
| July 9 | 4.4 | Concavity and Curve Sketching | pp. 267—68: 1, 3, 11, 15, 17 |
| July 10 | 4.4 | Concavity and Curve Sketching | pp. 268—69: 21, 25, 30, 33, 37, 53, 59, 69 p. 309: 55, 57, 59 |
| July 11 | 4.5 | Applied Optimization | pp. 276—77: 1, 3, 4, 5, 7, 11, 12, 14 |
| July 12 | 4.5 | Applied Optimization Review | pp. 278—81: 22, 22, 24, 25, 27, 32, 33, 41, 44 |
| July 13 | | Exam III | |
| July 16 | 4.6 | Indeterminate Forms and L'Hôpital's Rule | pp. 289—90: 3, 5, 9, 15, 19, 21, 23, 25 |
| July 17 | 4.6 4.7 | Indeterminate Forms and L'Hôpital's Rule Newton's Method | p. 290: 47, 51, 61, 63 pp. 294—95: 1, 3, 5, 13, 16 |
| July 18 | 4.8 | Antiderivatives | pp. 302—03: 1, 5, 7, 13, 15, 19, 23, 31, 33, 39, 43, 45 |
| July 19 | 4.8 | Antiderivatives | pp. 303—05: 55, 59, 61, 65, 87, 89, 91, 95, 103, 117, 119, 120 pp. 312—14: 13, 15, 17, 22, 35 |
| July 20 | 5.1 | Estimating with Finite Sums | pp. 322—24: 1, 3, 5, 7, 11, 19, [21, 22] |
| July 23 | 5.2 | Sigma Notation and Limits of Finite Sums | pp. 331—32: 1, 3, 7, 9, 13, 15, 19, 29, 35, 39 |
| July 24 | 5.3 | The Definite Integral | pp. 341—44: 1, 3, 5, 9, 11, 13, 7, 19, 27, 31, 35, 55, 59, 63, 65, 66, [77, 79, 82] |
| July 25 | 5.4 | The Fundamental Theorem of Calculus | p. 351: 1, 3, 5, 7, 9, 11, 17, 23, 27, 29, 33 |
| July 26 | 5.4 5.5 | The Fundamental Theorem of Calculus Indefinite Integrals and Substitution Review | pp. 351—53: 35, 39, 41, 43, 45, 47, 49, 53, 55, 58, 61—64, 73, 75 p. 358—60: 1, 3, 5, 7, 9, 13, 17, 19, 22, 23, 29, 39, 43, 49, 51, 61, 67 |
| July 27 | | Exam IV | |
| July 30 | 5.6 | Substitution and Area Between Curves | pp. 366—67: 1, 3, 7, 13, 25, 27, 31, 39, 47, 51, 53, 55, 57 |
| July 31 | 5.6 | Substitution and Area Between Curves | pp. 366—70: 67, 77, 81, 85, 89, 99, 103 pp. 386—90: 4, 5, 6, 30, 31, 32, 47, 48, 55 |
| Aug 2 | | Final Exam: 8—11 am | |