

SYLLABUS FOR DIFFERENTIAL CALCULUS

MATH 171, SECTION 002

Monday Wednesday Friday 2:05-3:20 W3-02

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Text: Calculus with Early Transcendentals, 5th ed., John Stewart

UNIT I

Chapter 2 Introduction to Differential Calculus, Introduction of Limit, Limit Laws and Limits of Functions, Precise Definition of Limit, Continuity, Limits at Infinity, Tangents and Rates of Change

Unit I Exam covering material from sections 2.1 – 2.7

UNIT II

Chapter 2 Introduction to Derivatives, Derivatives of Functions

Chapter 3 Derivatives of Polynomial and Exponential Functions, Product and Quotient Rules, Derivatives of Trigonometric Functions, Chain Rule, Implicit Differentiation, Higher-order Derivatives, Derivatives of Logarithmic Functions, Hyperbolic Functions, Related Rates

Unit II Exam covering material from sections, 2.8, 2.9, 3.1 – 3.10

UNIT III

Chapter 4 Local and Absolute Extreme Values, Mean Value Theorem, Derivatives and the Shape of a Graph, Limits of Indeterminate Forms, Curve Sketching, Optimization Problems

Unit III Exam covering material from sections 4.1 – 4.10

UNIT IV

Chapter 5 Area Problems, Definite Integrals, Fundamental Theorem of Calculus, Indefinite Integrals, Integration by Substitution

Cumulative Final Exam covering all material from previous units.

In addition to the three tests and final exam scheduled, there will be a short (5 question) quiz selected from the homework exercises. Unless otherwise specified the quizzes will be on Monday and Friday. This is intended to be a check on your progress, and will be part of the grade. There will be absolutely no makeup quizzes given. In lieu of quizzes there may be in-class work to be handed in. This will count as a quiz and therefore be part of your grade. Grading will be as follows: the total quiz score counts as one test and the final counts as two. Thus the formula for grading will be:

$$\frac{\text{test 1} + \text{test 2} + \text{test 3} + \text{total quiz score} + 2 \times \text{final}}{6}$$

Practice tests, previous exams and solutions, this syllabus, worksheets, links, and *current quizzes* can be found on line at <http://faculty.ccp.edu/faculty/jjernigan/> Please use this resource for your benefit.

Please bring your textbook, *pencil* and paper to each class, as we will often do problems during the class period. We will cover a significant amount of material this semester. You are encouraged to read ahead to prepare for class, as well as complete the homework assignments.

My office hours are Monday, Wednesday and Friday 3:30 to 4:30, Tuesday and Thursday and 2:00 to 3:00 and Wednesday 11:00 – 12:00. If these times are not suitable you are welcome to make an appointment. Please do not hesitate to come to me with any class problems you are having. There is no reason for any one who works hard to do poorly in this class. You are also encouraged to use the Learning Lab in room B2-36. The best days to make an appointment for free peer tutoring are Mondays or Tuesdays; you may go by yourself or with a friend, or just drop in. The Lab is open Monday through Thursday 9:00 A.M. to 7:00 P.M.; Friday 9:00 A.M. to 4:30 P.M.; and Saturday, 10:00 A.M. to 2:00 P.M.

It is the policy of CCP that no more than six absences are allowed during the course of the semester. Any student missing more than six classes will be automatically dropped from the class.

Additional resources: Much to the dismay of some calculus professors, the solutions to most of the problems in your text can be found at <http://www.hotmath.com>. This is a pay site, although you can find some problems for free. I have no objection to your using this, however I suggest that if you are really stuck you might try the hints before finding the solution. Temple University also has a nice site, <http://www.math.temple.edu/~cow/> You can use this as your own personal tutor, and it is free. There are problems to do and hints along the way. If you have an extra \$15 to spare, you might want to buy How to Ace Calculus, the Streetwise Guide Adams, Thompson and Haas. It is clear, concise and amusing. For a preview you can check out <http://www.math.ucdavis.edu/~hass/Calculus/HTAC/excerpts/excerpts.html> Another possibility is Bob Millers Calc for the Clueless for about \$11. Some of these links are on the web site. If you find other useful calculus sites please let me know and I will add them.

While I am aware that most students take math courses only when required to do so, I sincerely hope that this course will not only be stress free, but also enjoyable and instructive. Much of this depends on you. Please ask questions, give your opinion, and participate!