

MATH 111 - Calculus w/ Analytic Geometry I (4h)

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Course description: We will cover topics from Chapters 1 – 5 including but not limited to functions, Trigonometric functions, limits, continuity, differentiation, applications of derivatives, introduction to integration, the fundamental theorem of calculus.

Textbook: Single Variable Calculus 6th Ed.
James Stewart, Brooks/Cole Publishing Company

Grading:

Test dates will be announced at least two weeks before the exams. Quizzes may be unannounced when given. Homework will be assigned however not collected. Learning mathematics requires practice. It is well-advised to practice by doing the homework.

You will be given an assignment each day in class. You will be expected to read and study the reading assignment and make your best attempt to work the given exercises prior to the next class meeting. There will be concepts discussed in the reading assignment that we may not cover in class. My goal in class is to provide you with a basic introduction to the material so that you will be able to read and understand the textbook. I recommend that you read each assignment at least twice, once before we talk about that topic in class and then again after we have talked about that topic in class. I may request to see your homework at any time.

Points:

300 tests, 100 quizzes, and 200 final = 600 points

Grade Scale: Grading will be on a 10 percentage point scale with approximately 2-3 pts reserved for a (+) or a (-) grade

Final Exam: The final exam will be given on Thursday, December 13, 9 am – 12 noon. All Math 111 students will take essentially the same exam at the same time, therefore, the date and time of the final exam are not negotiable. We do not make exceptions to this policy, so please plan appropriately.

Algebra Skills Test: Good algebra skills are essential for you to be successful in Calculus. A Calculus readiness quiz will be given at the beginning of the semester. The score will be counted towards your grade as a quiz grade.

Attendance: You are expected to be **present, on time and prepared** for each scheduled class meeting. You are expected to **remain for the entire class. You should not leave the room once class has started unless it is an emergency.** If you are sleeping or doing other work in class you will be instructed to leave. All cell phones and pagers are to be turned OFF during class. You are responsible for everything that we do in class even if you are not present. If you miss a class, it is your responsibility to contact a classmate to find out what we discussed and to get caught up with the class before our next class meeting.

Makeup exams will be provided if you can not come to the class because of documented illnesses, emergencies, and University duties etc. Quizzes can not be made up.

Calculators and Computers: You are expected to have a calculator with you in class every day and may use the calculator of your choice in class and on homework assignments, but, you should have a non-graphing calculator available for some tests and exams. I will communicate with you regularly through your WFU e-mail account. You should check your WFU e-mail account daily or arrange forwarding to an account that you do check daily. I will send numerous documents to you as attachments to e-mail messages (mostly Word and PDF format). You will be expected to print these documents and use them as directed.

Academic Needs: It is the responsibility of any student with a disability who requests a reasonable accommodation to contact Learning Assistance Center (758-5939) for further assistance, if you haven't already done so.

Honor Policy: All work turned in for a grade in this course is expected to be your work and yours alone. All information presented by you concerning your performance is expected to be true. Any suspected violations of the Wake Forest University Honor Code that come to my attention will be reported to the Honor Council. You will be required to sign a pledge statement on each test and on the final exam.

University emergencies: The requirements stated on this syllabus may be revised if classes are cancelled for an extended period of time due to emergency or illness.

Dr. Cotwright's suggested assignments for MTH 111; Calculus, 6th ed., by James Stewart.

Please note that these assignments may be changed based on time constraints.

Trigonometry Review: handout (Note that appendix D in your text is a trigonometry review section.)

Ch. 1: Functions and Models

Sec. 1.1: 4 Ways to Rep a Function, pp.22, 23 #1, 2, 5, 6, 7, 8, 19, 23, 25, 27, 29, 37, 39

Sec. 1.3: New Functions from Old, p.47 # 35, 37, 40, 41, 45, 49 Omit sec. 1.2, 1.4, and 2.1

Ch. 2: Limits and Rates of Change

Sec. 2.2: Limit of a Function, pp. 79-81 # 3, 5, 6, 7, 9, 13, 17 – 29 odd

Sec. 2.3: Limit Laws, pp. 89-91 #1, 2, 11, 13, 15, 17, 21, 23, 25, 35, 36, 39, 41, 45, 47 Sec. 2.4: Omit

Sec. 3.5: Limits of Trig Functions, p. 175 #35 – 41 all

Sec. 2.5: Continuity, pp. 110-112 #1, 3, 4, 5, 9, 11, 13, 15, 17, 19, 33, 35, 37, 39, 41

Sec. 2.6: Rates of Change, pp. 119,120 #1, 3, 5a, 9, 11, 17

Ch. 3: Derivatives

Sec. 3.1: Derivatives, pp. 132, 133 #1, 3, 5, 7, 13, 15, 19, 20, 21, 22, 23, 25, 27, 31

Test 1

Sec. 3.2: Derivative as a Function, pp. 142-144 #4, 5, 6, 7, 9, 11, 13, 21, 25, 27, 35, 36

Sec. 3.3: Differentiation Formulas, pp.154-156 #1 – 35 odd, 51, 57, 59, 67, 71, 79

Sec. 3.4: Rates of Change in the Natural & Social Sciences, p. 166 #1 – 7 odd

Sec. 3.5: Derivatives of Trig Functions, p. 174 #1 – 15 odd, 21, 23, 29

Sec. 3.6: The Chain Rule, pp. 181, 182 #7 – 17odd, 21 – 39 odd, 43, 45, 53, 55

Sec. 3.7: Implicit Differentiation, pp. 188, 189 #5, 7, 9, 11, 13, 19, 21, 25

Sec. 3.9: Related Rates: handout sheet

Sec. 3.8: Higher Derivatives, pp. 195,196 #1, 3, 5, 7, 9, 13, 17, 25, 29, 31, 43, 47, 49a Sec. 3.10: Omit

Test 2

Ch. 4: Applications of Differentiation

Sec. 1.1&1.3: Odd/Even Functions & Shifts, p.24 #57, 59, 61, 63, 65 pp.45,46 #1, 3, 5, 9, 11, 23

Sec. 4.4: Limits at Infinity; Horizontal Asymptotes, pp. 260,261 #1, 3, 9 – 19 odd, 25, 27, 29, 35, 37, 39

Sec. 4.1: Max and Min Values, pp. 230, 231 #3, 5, 11, 13, 15, 17, 25, 29, 31, 33, 35, 39, 43-51 odd

Sec. 4.3: Derivatives Affect the Shape of a Graph, pp.247,248 #1, 3, 5, 7, 8, 9, 13, 15, 17, 23, 25, 27

Sec. 4.5: Summary of Curve Sketching, p. 270 #1, 5, 7, 9, 11, 13, 15, 17, 35, 38, and from p.262 #51, 53

Sec. 4.7: Optimization Problems: handout sheet

Sec. 4.2: Rolle's & Mean Value Theorem, pp.238, 239 #1, 3, 5, 7, 11, 13 Omit sections 4.6, 4.8, 4.9

Test 3

Ch. 5: Integrals

Sec. 4.10: Antiderivatives, pp.305, 306 #1, 7, 9, 11, 13, 15, 17, 21, 23, 27, 31, 37, 39, 53, 55

Sec. 5.1: Areas and Distances, p.324 #1, 3, 5a

Sec. 5.2: The Definite Integral, pp. 336-338 # 5, 17, 19, 33, 35, 39, 41, 42, 43, 47, 49

Sec. 5.3: The Fundamental Theorem of Calculus, p. 348 #3, 7, 9, 11, 19, 21, 23, 25, 27, 29, 31

Sec. 5.4: Indefinite Integrals and the Net Change Theorem, p.357 #7, 17, 19, 21, 23, 25, 31, 33

Sec. 5.5: The Substitution Rule, pp.365, 366 #1 – 23 odd, 37, 39, 41, 45 – 51 odd