

Prerequisite: A grade of "C" or better in MATH 1113 or Placement by the Mathematics Assessment Test

Content: Derivatives and integrals of polynomial, rational, logarithmic and exponential functions. Variable rate of change, amount of accumulated change, and graphing. Applications to problems in business, management, and economics are emphasized, with some attention to problems in the social sciences. No student may receive credit for both MATH 2240 and MATH 2253.

Section: 002 (CRN 21426) **Time:** 6:00-7:15 pm **Days:** M W **Room:** D 220 **Credit:** 3 Credit Hours

Instructor: Dr. Bi Roubolo Vona **Office:** D 152

Office Hours: M T W R: 1:00-1:50 PM; M W: 4:30-5:30 PM, and by appointment (limited)

Tel: 678-915-7235 **Email:** bvona@spsu.edu

Assessment:

Four Tests (pick best 3): 25% each; Final exam (cumulative): 20%; Attendance & Participation: 5%

Standard Grade Scale: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; Below 60 = F.

A homework assignment shall be given every Monday. Homework will not be collected. There will be four (4) written tests and a cumulative final examination. The written tests will be based mainly (content wise) on the intervening weekly homework sets, with some problems taken from the problems covered in class. Any request for a make-up for a regular test (not final exam) must be received by the instructor prior to the starting time of the scheduled test. Students are restricted to at most one make-up test.

Text: *Applied Calculus for the Managerial, Life, and Social Sciences*, 8th edition, Tan, Brooks/Cole).

Calculator: TI-83/TI-84 Family of calculators.

Learning Outcome: Upon successfully completing this course students should be able to:

1. Find limits of functions and determine continuity of functions.
2. Find derivatives of algebraic, logarithmic, and exponential functions, and use derivatives to solve applied problems.
3. Find integrals of some algebraic and exponential functions, and use integrals to solve applied problems.

Miscellaneous Dates:

- **Classes begin:** Monday, January 7
- **Martin Luther King Jr. Holiday:** Monday, January 21
- **Last day to withdraw with a grade of W:** Tuesday, February 26
- **Spring Break:** Sunday, March 3 – Saturday, March 9
- **Last day of classes:** Monday, April 29
- **Final Exams:** May 1-May 7 (Exact Date & Time to be determined later)

Quiet Learning Environment: Telephones, pagers, and other communication devices must be set for inaudible signal while in the classroom. Eating, foul language and excessive talking, and unauthorized visitors will not be tolerated. The instructor reserves the right to exclude student(s) exhibiting such disruptive behavior from the class session.

Students with disabilities who believe that they need accommodations in this class are encouraged to contact the counselor working with disabilities at 678-915-7244 as soon as possible to better insure that such accommodations are implemented in a timely fashion.

Academic Misconduct: Information about the SPSU Honor Code and the misconduct procedure may be found at <http://spsu.edu/honorcode/>.

Math 2240-002 Survey of Calculus Time: 6:00-7:15 pm Days: M W Room: D 220
Practice Exercises Course Outline (Tentative Exam Schedule)

Week / Dates	Topic	Section	Homework
1 1/07 1/09	Precalculus Review I Precalculus Review II The Cartesian Coordinate System	1.1 1.2 1.3	(pg. 13) 7-21 odd, 39-48 63-65 odd, 75-79 odd, 85-101 odd, 105-117 odd, 127-137 odd (pg. 23) 1-17 odd, 25-29 odd (pg. 30) 1-6, 21-24
2 1/14 1/16	Straight Lines Functions and Their Graphs The Algebra of Functions	1.4 2.1 2.2	(pg. 41) 1-5, 11-21 odd, 27-45 odd, 46 (pg. 57) 1-13 odd (pg. 72) 1-6, 25-45 odd, 46, 47, 48, 49, 51
3 1/21 1/23	Holiday Limits	 2.4	 (pg. 111) 1-15 odd, 27-36, 49-59 odd, 63-67, 73-78
4 1/28 1/30	Review Test 1		
5 2/04 2/06	One-Sided Limits and Continuity The Derivative Basic Rules of Differentiation	2.5 2.6 3.1	(pg. 126) 1-20, 21-39 odd, 40, 45-55 odd (pg. 145) 9-25 odd, 29, 31, 33 (pg. 164) 1-35 odd, 41, 43, 46
6 2/11 2/13	The Product and Quotient Rules The Chain Rule	3.2 3.3	(pg. 177) 1-9 odd, 15-21 odd, 35, 36, 39, 41, 46 (pg. 189) 1-19 odd, 29, 30, 31, 39, 61, 65, 66
7 2/18 2/20	Higher-Order Derivatives Implicit Differentiation and Related Rates	3.5 3.6	(pg. 212) 1-13 odd, 21, 22, 27, 30 (pg. 223) 1, 5, 9-16, 31-33, 39, 41 48, 63
8 2/25 2/27	Review Test 2		
9 3/4-3/9	Spring Holidays		
10 3/11 3/13	Applications of the First Derivative. Applications of the Second Derivative Curve Sketching	4.1 4.2 4.3	(pg. 255) 1-8, 11, 13-21 odd, 37-42, 45-48 (pg. 274) 1-8, 23-28,33, 34, 45-48, 57-62 (pg. 291) 1-19, 37, 38, 40, 41, 42, 50, 51, 66, 67
11 3/18 3/20	Optimization I Optimization II Exponential Functions	4.4 4.5 5.1	(pg. 305) 1-8, 15-24, 42, 43, 45 (pg. 319) 1-7, 12 (pg. 334) 1-25 odd,
12 3/25 3/27	Logarithmic Functions Differentiation of Exponential Functions Differentiation of Logarithmic	5.2 5.4 5.5	(pg. 343) 1-10, 17-22, 33-40, 46 (pg. 366) 1-31 odd, 41, 45, 47 (pg. 377) 1-35 odd, 53
13 4/01 4/03	Review Test 3		
14 4/08 4/10	Antiderivatives and the Rules of Integration Integration by Substitution	6.1 6.2	(pg. 406) 1-39 odd, 42, 44, 51-59 odd, 60-62, 65, 75 (pg. 418) 1-39 odd, 19, 29, 31, 33, 47, 49
15 4/15 4/17	The Fundamental Theorem of Calculus Evaluating Definite Integrals	6.4 6.5	(pg. 438) 5-39 odd, 45, 47 (pg. 448) 1-27 odd
16 4/22 4/24	Review Test 4		
15 4/29	Review Last Day of Classes		
Final Exam			