

MATH 2450-020: EXAM 2 INFO/LOGISTICS/ADVICE

• **INFO:**

WHEN/WHERE:	Friday (10/10) at 1:00pm in PETRE 121 (our usual room)	DURATION:	50 mins
PROBLEM COUNT:	Appropriate for a 50-min exam	BONUS COUNT:	Several

- TOPICS COVERED: (“SST” = ”Smith, Strauss & Toda” 6th-ed (i.e. the textbook))
 - * SST 11.1: Functions of Two or Three Variables: Domain, Level Curves, Level Surfaces
 - * SST 11.2: Functions of Two or Three Variables: Limits
 - * SST 11.3: Functions of Two or Three Variables: Partial Derivatives, [Total Differentials](#), [Linear Error Estimation](#)
 - * SST 11.5: Multivariable Chain Rules, Implicit Differentiation, Related Rates
 - * SST 11.6: Gradients, Directional Derivatives, [Tangent Planes](#), Normal Lines
 - * SST 11.7: Relative Extrema, Absolute Extrema over a closed & bounded set
 - * **REMARK: Topics in blue are covered in SST 11.4, but in lecture were lumped into sections 11.3 & 11.6.**
 - * **REMARK: No formulas will be provided, so either memorize them or learn how to derive them.**

- TOPICS CANDIDATE FOR BONUS QUESTIONS:
 - * SST 11.8: Lagrange Multipliers with one constraint (i.e. involving only one parameter λ)
 - * ??????
 - * **REMARK: Expect the bonus questions to be collectively worth no more than 20 points.**

- TOPICS NOT COVERED AT ALL:
 - * Sketching in three dimensions
 - * Any Proofs discussed in the textbook or during lecture
 - * Functions of Four or More Variables
 - * SST 11.2: Continuity, $\delta - \epsilon$ Definition of Multivariable Limits
 - * SST 11.3: Differentiability, Limit Definitions of Partial Derivatives e.g. $f_x(x, y) := \lim_{\Delta x \rightarrow 0} \frac{f(x + \Delta x, y) - f(x, y)}{\Delta x}$
 - * SST 11.3: Geometric Interpretation of the Partial Derivative as a Slope
 - * SST 11.6: Limit Definition of Directional Derivative e.g. $D_{\mathbf{u}}f(x_0, y_0) := \lim_{h \rightarrow 0} \frac{f(x_0 + hu_1, y_0 + hu_2) - f(x_0, y_0)}{h}$
 - * SST 11.6: Geometric Interpretation of the Directional Derivative as a Slope
 - * SST 11.7: Absolute Extrema over a set that is NOT closed & bounded
 - * SST 11.7: Least Squares Approximation of Data (pg 892 EXAMPLE 7)
 - * SST 11.8: Lagrange Multipliers with two constraints (i.e. involving two parameters λ & μ)
 - * SST 11.8: Interpretation of Lagrange Multiplier λ as the rate of change of an extreme value of function f

• **LOGISTICS:**

- All you need to bring are pencil(s), eraser(s) & your Raidercard.
- **Clear your desk of everything except pencil(s), eraser(s) & your Raidercard.**
- **Backpacks are to be placed at the front or sides of the classroom. Hats are to be put away.**
- Books, notes, notecards, calculators NOT PERMITTED. No talking or cheating!
- Mobile devices (phones, tablets, PC’s, music, ...) & headphones are to be shut off and put away.
- **Complete work in the space provided for each problem/part. No extra blank paper will be provided!**
- Tissues will be furnished – for allergies, not for sobbing (hopefully...)
- **If you ask to use the restroom during the exam, either hold it or turn in your exam for grading.**

- **ADVICE:**

- **Use the restroom before the exam, if needed.**
- Review past homework, and perhaps even work some similar problems in the textbook.
- Review relevant examples in the textbook & the lecture outlines. Study for the exam together in groups.
- Use flashcards to aid in memorization of hard formulas/definitions/theorems.
- If you need more review, show up to the last-minute help session Thursday evening (10/09). [See Course Calendar]
- **SHOW APPROPRIATE WORK!** Correct solutions without appropriate work earn no points! Attempt bonus ?'s.