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

- **INFO:**

LOCATION:	Tuesday (12/09) at 10:30am in **SCIENCE 007**	DURATION:	2.5 hours
PROBLEM COUNT:	**12 Multiple Choice + 4 Free-Response**	BONUS COUNT:	(Likely None)

  - <u>TOPICS CANDIDATE FOR THE EXAM:</u> $\Big($"SST" = "Strauss, Smith & Toda" (i.e. the textbook)$\Big)$

    * (**All 'TOPICS CANDIDATE FOR THE EXAM's from Info/Logistics/Advice for EXAMS 1,2,3**)
    * SST 11.2: Continuity of Functions of Two Variables
    * SST 13.1: Vector Fields: Div, Curl: $\text{div } \vec{F} = \nabla \cdot \vec{F}$, $\text{curl } \vec{F} = \nabla \times \vec{F}$
    * SST 13.1: Scalar Fields: Gradient, Laplacian: $\text{grad } f = \nabla f$, $\nabla^2 f = \text{div(grad } f) = \nabla \cdot (\nabla f)$
    * SST 13.2: Line Integrals in $\mathbb{R}^2$ & $\mathbb{R}^3$: $\int_C f \, ds$, $\int_C f \, dx$, $\int_C f \, dy$, $\int_C f \, dz$, $\int_\Gamma \vec{F} \cdot d\vec{R}$
    * SST 13.3: Gradient Fields, Scalar Potentials, FTLI, Path Independence
    * SST 13.4: Green's Theorem for Simply-Connected Regions: $\oint_C (M dx + N dy) = \iint_D \left(\frac{\partial N}{\partial x} - \frac{\partial M}{\partial y} \right) \, dA$
    * SST 13.5: Surface Integrals, Flux Integrals: $\iint_S f \, dS$, $\iint_S \vec{F} \cdot \widehat{\mathbf{N}} \, dS$
    * SST 13.6: Stokes' Theorem: $\oint_C \vec{F} \cdot d\vec{R} = \iint_S \left(\nabla \times \vec{F} \right) \cdot \widehat{\mathbf{N}} \, dS$
    * SST 13.7: Gauss' (Divergence) Theorem: $\oiint_S \vec{F} \cdot \widehat{\mathbf{N}} \, dS = \iiint_E \nabla \cdot \vec{F} \, dV$
    * REMARK: **Some problems may require a sketch of a region**.
    * REMARK: **No formulas will be provided, so either memorize them or learn how to derive them**.
  - <u>TOPICS CANDIDATE FOR BONUS QUESTIONS:</u>
    * (Likely None – turning in Bluebook early earns bonus points for FINAL EXAM)
  - <u>TOPICS NOT COVERED AT ALL:</u>
    * (**All 'TOPICS NOT COVERED AT ALL' sections from Info/Logistics/Advice for EXAMS 1,2,3**)
    * SST 13.4: Green's Theorem for Multiply-Connected Regions
    * SST 13.4: Normal Derivatives: $\frac{\partial f}{\partial n} := \nabla f \cdot \vec{\mathbf{N}}$
    * SST 13.5: Non-Orientable Surfaces such as the Möbius Strip & Klein Bottle
    * SST 13.5: Parametric Surfaces (EXAMPLES 5 & 6, pages 1070-1071): $\vec{\mathbf{R}}(u,v) = \cdots$
    * SST 13.6: Physical Interpretation of Stokes' Theorem (page 1081)
    * SST 13.7: Green's 1st Identity (EXAMPLE 6, pages 1091-1092): $\iiint_E \left[f\nabla^2 g + \nabla f \cdot \nabla g \right] \, dV = \oiint_S f \frac{\partial g}{\partial n} \, dS$
    * SST 13.7: Physical Interpretation of Gauss' (Divergence) Theorem (page 1092)
    * SST Ch13: (Any textbook examples & problems involving physics)

- **LOGISTICS:**

  - All you need to bring are pencil(s), eraser(s), your Raidercard, & a **Scantron**.
  - **Get a TTU Scantron at the bookstore in the Student Union Bldg – see info above Course Calendar**.
  - Clear your desk of everything except pencil(s), eraser(s) & **Scantron**.
  - Once desks are cleared, I'll hand out your BlueBook & Final Exam.
  - **Be sure to use a #2 pencil to fully bubble-in answers on the Scantron**.
  - **The first four pages of Bluebook will be for the Free-Response Problems**.
  - **The remaining pages of Bluebook are for <u>scratch work</u> for the <u>Multiple Choice Problems</u>**.
  - **The scratch work for the Multiple Choice will <u>not</u> be graded**.
  - **Partial credit is possible for the Free-Response Problems, but <u>not</u> possible for the Multiple Choice**.
  - **You either get a Multiple Choice Problem correct (earn all points) or incorrect (earn no points)**.
  - Books, notes, notecards, calculators NOT PERMITTED.
  - Mobile devices (phones, tablets, PC's, music, ...) are to be shut off and put away.
  - Tissues will be furnished – for allergies, not for sobbing.   No talking or cheating!
  - **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.**

  - **Turn in a BlueBook early – otherwise you won't start the final exam on time.**

  - **You must show up for the final exam & turn in a BlueBook & Scantron....**

    * ....even if you choose not to take the final exam and your grades are good enough to still pass....

    * **....otherwise you're guaranteed to receive an F in the course!** (Departmental Policy)

  - Review past homework & exams, and perhaps even work some similar problems in the textbook.

  - Review relevant examples in the textbook.

  - Use flashcards to aid in memorization of hard formulas.

  - Study for the exam together in groups.

  - SHOW APPROPRIATE WORK! Attempt bonus questions.