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**Instructor:** Prof. Anthony Várilly-Alvarado    **Time:** MWF 11:00-11:50AM  
**Office:** 222 Herman Brown    **Classroom:** Herring Hall (HRG) 100  
**Email:** varilly@rice.edu    **Office Hours:** MW 5PM-6PM  
**Class Webpage:** Look for Math 101 002 F14 on Owlspace

**Recitations:** There are three TA sessions for this course:

<b>Time:</b> M 7-9PM	<b>Classroom:</b> Herman Brown 427
<b>Time:</b> W 7-9PM	<b>Classroom:</b> Herman Brown 227
<b>Time:</b> Th 7-9PM	<b>Classroom:</b> Herman Brown 227

**Text:** James Stewart: *Calculus Early Transcendentals 7E*. We will cover chapters 1 through 6. The bookstore has a custom-made bundle for Rice (ISBN 13: 978-1-28-590506-8), which includes a webAssign account. The book was designed to minimize costs for you (provided you want a paper copy of the book). You can also use Stewart's Single Variable Calculus: Early Transcendentals (7th Edition) or Stewart's Calculus: Early Transcendentals (7th Edition), but you will have to purchase a webAssign account separately.

**Homework:** There are **two** components to the homework: webAssign and written assignments.

1. WebAssign Homework will be due **every class day at 9:00PM** (starting on Friday, August 29th). It will be assigned through the WebAssign website. Each student needs to sign up for a WebAssign account and get familiar with WebAssign as soon as possible. Most homework problems are to be completed online, and are quite similar to textbook exercises.

The `webAssign.net` key for this course is: **rice 6293 9630**.

It is **strongly recommended** that you keep a notebook where you write down complete solutions to the assigned exercises; you can use this notebook to study for exams. Imagine that a fellow student will be reading your homework notebook to study for an exam. If your work is not detailed enough to be useful, it is unlikely to earn much credit if it were being graded. Another student reading your solutions should be able to guess at the question you are trying to answer without referring to the textbook.

2. Every week I will assign 6-8 problems from the text that you have to hand in on **Monday by 6:00pm in my office** (you are welcome to hand them in at the beginning of lecture on Monday as well). There is one exception to this rule: the first such set of problems will be due on **Wednesday September 3rd**, due to the Labor Day holiday. These problems will be of a nature that cannot be covered by online systems. They will be graded and returned to you a week after you hand them in.

The homework is not pledged and you can collaborate with other students in the class. In fact, you are very much encouraged to do so. However, you are not allowed to look up solutions in any written form; in particular, you are not allowed to look up solutions online. On written assignments you should write up your solutions individually. Make sure you understand the solution to a problem before typing in your answer on WebAssign.

**Late homework assignments will not be accepted for ANY reason – instead, your three lowest webassign scores and your lowest “paper-assignment” will be dropped.**

The no late homework policy is iron clad. There will be roughly 35 assignments and there could be up to 200 students currently signed up for the course. These numbers mean that the only fair policy on late homework is as above.

**Exams:** There will be two midterm tests during the semester. They will take place on **Thursday, October 2nd at 7:00 pm** and on **Thursday, November 6th at 7:00 pm**.

**Final exam:** The date for the final exam is not available at this time. It is the policy of the Mathematics Department that no final may be given early to accommodate student travel plans. If you make travel plans that later turn out to conflict with the scheduled exam, then it is your responsibility to either reschedule your travel plans or take a zero in the final.

Exams are pledged. Books, notes, and calculators will **not** be allowed on exams. Make-up exams will be allowed only in the case of a documented medical emergency. If an exam conflicts with a holiday you observe, please let me know before the end of the first week of classes.

**Grades:** Homework will count as 20% of your final grade (10% webAssign, 10% paper assignments). Your final grade will be computed as

$$20\% \text{ Homework} + \text{Maximum of } \begin{cases} 20\% \text{ Midterm I} + 20\% \text{ Midterm II} + 40\% \text{ Final} \\ 25\% \text{ Midterm I} + 20\% \text{ Midterm II} + 35\% \text{ Final} \\ 20\% \text{ Midterm I} + 25\% \text{ Midterm II} + 35\% \text{ Final} \\ 25\% \text{ Midterm I} + 25\% \text{ Midterm II} + 30\% \text{ Final} \end{cases}$$

**Attendance:** Attendance is not required. However, you are responsible for all the material and announcements covered in lecture. While Owlspace is a valuable resource, not all announcements will be posted there. Nevertheless, you are responsible for reading any emails I send to the class through Owlspace.

**Expectations:** In my experience as a student, most people do not follow all the details of a lecture in real time. When you go to a Math lecture you should expect to witness the big picture of what's going on. You should pay attention to the lecturer's advice on what is important and what isn't. A lecturer spends a long time thinking on how to deliver a presentation of an immense amount of material; they do not expect you to follow every step, but they do expect you to go home and fill in the gaps in your understanding. Not attending lecture really hurts your chances at a deep understanding of the material.

**Success:** The most successful students tend to:

- Attend every class,
- Read the book and review their notes daily,
- Work on all the homework as it is assigned,

- Seek help as soon as they encounter trouble.

I encourage you to utilize your classmates, recitation sessions and office hours whenever you are having trouble understanding the course material. Get your questions answered as they arise – waiting until you have many questions (or until an exam is looming!) will make help in any form less effective.

**Disability Support:** Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Allen Center

### Tentative Schedule:

#### **Week 1:**

08/25 Section 1.1-2: Basics on functions

08/27 Section 1.3: Stretching, shifting and composing functions

08/29 Section 1.5: Exponential functions

#### **Week 2:**

**09/01 No class, Labor Day**

09/03 Section 1.6: Inverse functions and Logarithms

09/05 Section 2.1: Tangents and velocity problems

#### **Week 3:**

09/08 Section 2.2: The limit of a function

09/10 Section 2.3: Limit laws

09/12 Section 2.4: Epsilons and deltas

#### **Week 4:**

09/15 Section 2.5: Continuity

09/17 Section 2.6: Limits at infinity; horizontal asymptotes

09/19 Section 2.7: Derivatives

#### **Week 5:**

09/22 Section 2.8: Derivatives as functions

09/24 Section 3.1: Derivatives of polynomials and exponential functions

09/26 Section 3.2: Product and Quotient rules

#### **Week 6:**

09/29 Section 3.3: Derivatives of Trigonometric Functions

10/01, Review

**THU, 10/02, 7-9PM First Midterm Exam**

10/03 Section 3.4: The Chain Rule

**Week 7:**

10/06 Section 3.5: Implicit differentiation  
10/08 Section 3.6: Derivatives of Logarithmic Functions  
10/10 Section 3.7: Rates of change

**Week 8:**

**10/13 No class, Midterm Recess**  
10/15 Section 3.8: Exponential Growth and Decay  
10/17 Section 3.9: Related Rates

**Week 9:**

10/20 Section 3.10-11: Linear approximations and differentials; Hyperbolic functions  
10/22 Section 4.1: Maximum and Minimum Values  
10/24 Section 4.2: The Mean Value Theorem

**Week 10:**

10/27 Section 4.3: Derivatives and Graphs  
10/29 Section 4.4: L'Hôpital's Rule  
10/31 Section 4.5-6: Curve Sketching

**Week 11:**

11/03 Section 4.7: Optimization  
11/05 Section 4.8: Newton's method  
**THU, 11/06 7-9PM Second Midterm Exam**  
11/07 Section 4.9: Antiderivatives

**Week 12:**

11/10 Section 5.1: Areas and Distances  
11/12 Section 5.2: Definite Integration  
11/14 Section 5.3: The Fundamental Theorem of Calculus

**Week 13:**

11/17 Section 5.4: Indefinite Integrals  
11/19 Section 5.5: The Substitution Rule  
11/21 Section 6.1: Areas between curves

**Week 14:**

11/24 Section 6.2: Volumes  
11/26 Section 6.5: Average Value of a Function  
**11/28 No class, Thanksgiving**

**Week 15:**

12/01 Section 6.3: Cylindrical Shells  
12/03 Section 6.4: Work  
12/05 Review, last day of classes