Instructor:	Miriam Kuzbary	**Time:**	MWF 11:00-11:50AM
Office:	Herman Brown Hall 48	**Classroom:**	Herman Brown Hall 427
Email:	`miriam.kuzbary AT rice.edu`		
Office Hours:	Mon 1:00-2:00PM, Wed 10:00-11:00PM Thu 1:00-2:00PM And by appointment through email		

Class Webpage: Owlspace

TAs:	TBA (Head TA)
	TBA
	TBA

Recitations: There are four problem sessions for this course:

Time:	Sun 7:00-9:00 PM	**Classroom:**	TBA
Time:	Mon 7:00-9:00 PM	**Classroom:**	TBA
Time:	Wed 7:00-9:00 PM	**Classroom:**	TBA
Time:	Thu 7:00-9:00 PM	**Classroom:**	TBA

Course Description: In this class we will continue our study of integration from Calculus I by learning more techniques for evaluating integrals. We will also use basic ideas about infinite and infinitesimal objects in order to understand sequences and series and their properties. Additionally, we will use calculus to study the basics about curves, such as parametrizations and arc length. We will also study polar coordinates and basic facts about functions expressed in polar coordinates.

Expectations: Learning math takes a lot of work and often takes time to process and internalize. As a result, even if you are used to getting by without attending class, it is very important that you attend every lecture on time and do every homework assignment.

Learning math is like playing a new sport; you need to practice regularly and do different types of drills in order to become competent. This also means that mistakes are completely normal! Few people understand every concept the minute they are taught it. Our classtime is your opportunity to make mistakes and ask questions. Do not be afraid of sounding silly!

During our lectures we will have many conversations about what we are learning, so come to class expecting that you will be both contributing to the discussion and taking away something interesting to think about.

It is also your responsibility to check both your Rice email address and Owlspace to keep informed of any announcements, homework assignments, syllabus adjustments, or policy changes made during scheduled classes.

Text: James Stewart: *Calculus Early Transcendentals 7E.* We will cover chapters 7, 8, 10 and 11. The bookstore has a custom-made book for Rice, which includes a webAssign account (see below). 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.

Grading: Your homework will count as 20% (10% WebAssign and 10% written) of your final grade. The remaining portion of your grade will be the **maximum** of the following four options:

- 25% Midterm I, 25% Midterm II, 30% Final.
- 20% Midterm I, 25% Midterm II, 35% Final.
- 25% Midterm I, 20% Midterm II, 35% Final.
- 20% Midterm I, 20% Midterm II, 40% Final.

Homework: Homework is an extremely important part of the class and counts as 20% of the final grade. You will be learning many different techniques in this class, and they will take practice in order to gain fluency with them. There are **two** components to the homework: WebAssign and written assignments.

1. WebAssign Homework will be due **every class day at 10:00PM**. It will be assigned through the WebAssign website. These will be short problems in order to cement what you learned the previous class day. Your performance on these questions will help both of us gauge your base-level understanding, therefore it is important for you to understand the answer you are submitting.
   WARNING: WebAssign only grades answers, not your justification for these answers, and will not help you practice good exposition. 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.

   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. You will receive an email with the `webAssign.net` key for this course sometime during the first week of classes.

2. Written homework will consist of 5-8 problems each week to be handed in **at the beginning of the class** on their due date. These problems will be posted on Owlspace. The first such set of such problems will be due on **Friday August 29th**. You should submit detailed solutions to these problems, with organized justification of your work in grammatically correct, complete English sentences. You will be graded not only on the mathematical content of your solutions, but also on your exposition.

Collaboration is encouraged, however, any written homework must be written up individually.

Late homework assignments will not be accepted for ANY reason – instead, your four lowest WebAssign scores and your lowest "written assignment" will be dropped.

Exams: There will be two **in-class** midterm tests during the semester. They will take place on **Monday, September 22nd** and on **Wednesday, November 5th**.

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 closed book, closed note, pledged and taken in class. 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.

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 Introduction/Review: Integration
08/27 Review: Substitution
08/29 Section 7.1: Integration by parts

Week 2:
09/01 **No class: Labor Day**
09/03 Section 7.2: Trigonometric Integrals
09/05 Sections 7.2–7.3: Trigonometric Integrals/Trigonometric Substitution

Week 3:
09/08 Section 7.3: Trigonometric Substitution II/Partial fractions
09/10 Section 7.4: Partial Fractions II
09/12 Section 7.5: Strategy for Integration

Week 4:
09/15 Section 7.8: Improper Integrals I
09/17 Section 7.8: Improper Integrals II
09/19 Chapter 7: Review

Week 5:
09/22 MIDTERM I
09/24 Section 11.1: Sequences I
09/26 Section 11.1: Sequences II

Week 6:
09/29 Section 11.2: Series I

10/01 Section 11.2: Series II
10/03 Section 11.3: Integral Test I

Week 7:
10/06 Section 11.3: Integral Test II
10/08 Section 11.4: Comparison Test
10/10 Section 11.4: Limit Comparison Test

Week 8:
10/13 No class: Midterm Recess
10/15 Section 11.5–11.6: Alternating Series; Absolute Convergence
10/17 Section 11.6: Ratio and Root tests I

Week 9:
10/20 Section 11.8: Power Series
10/22 Section 11.9: Representing Functions as Power Series
10/24 Section 11.10: Taylor Series I

Week 10:
10/27 Section 11.10: Taylor Series II
10/29 Section 11.10: Taylor Series III
10/31 Section 11.11: Applications of Taylor Polynomials

Week 11:
11/03 Chapter 11: Review
11/05 MIDTERM II
11/07 Section 11.11: Taylor Polynomials II

Week 12:
11/ 10 Section 6.2: Volumes (Review)
11/12 Section 8.1–8.2: Arc Length; Area of a Surface of Revolution I
11/14 Section 8.1–8.2: Arc Length; Area of a Surface of Revolution II

Week 13:
11/17 Section 10.1: Parametric Curves
11/19 Section 10.2: Parametric Curves and Definite Integration
11/21 Section 10.3: Polar Coordinates I

Week 14:
11/24 Section 10.3: Polar Coordinates II
11/26 Chapter 9: A Glance at Differential Equations and Their Applications
11/28 No class: Thanksgiving break

Week 15:
12/01 Section 10.4: Area and lengths in polar coordinates I
12/03 Section 10.4: Area and lengths in polar coordinates II

12/05 Review; last day of classes

Week 16:
TBD Final Exam