MATH 201H: Calculus I

Spring 2013 **Section 001** **4 credit hours**

Instructor:	Dr. Trent Kull	**Instructor's Teaching Schedule:**	MWF, 9:30 – 10:45a Owens 104
Office:	Bancroft 154		
Office Phone:	803.323.4547	**Office Hours:**	TR, 9 – 11a W, 2 – 3:30p Other times by appointment.
Math Department:	803.323.2175		
Campus Email:	kullt@winthrop.edu		

The instructor reserves the right to make modifications to this syllabus. Students will be notified in class & by email.
A complete syllabus and schedule is available at: www.winthrop.edu/cas/math/syllabus.

Grades

To ensure that you receive a certain letter grade (or better), you must attain a minimum overall percentage. These minima are: A: 90; B: 80; C: 70; D: 60.

Assignments/Assessments

Date	*Event*	*Percentage*
Various	*Quizzes*	*15*
February 1	*Exam 1*	*16*
February 25	*Exam 2*	*16*
March 27	*Exam 3*	*16*
TBD	*Honors presentation*	*5*
April 19	*Exam 4*	*16*
April 30	*Final Exam*	*16*

Text, Materials, and Resources

- Required Text: **Calculus Early Transcendentals 10E Chp 1-5 f/Winthrop:** Edition: 10th; ISBN: 9781118477878 by Anton
  - Students planning to take MATH201 and/or MATH202 only can choose to purchase the text materials in sections at a reduced cost.
  - Students planning to take MATH301 should purchase full text to reduce overall textbook costs.
  - A full color version of the textbook is on reserve at the Dacus Library.
- MATH201 students are expected to have a scientific graphing calculator.
- Students are encouraged to use office hours as a way to receive extra help.
- The Mathematics Tutorial Center information is available at: www.winthrop.edu/mtc.

Course Policies (section specific policies may be added on the full syllabus)

1. Winthrop University is dedicated to providing access to education. If you have a disability and require specific accommodations to complete this course, contact the Office of Disability Services (ODS) at 323-3290. Once you have your official notice of accommodations from the Office of Disability Services, please inform me as early as possible in the semester.
2. Review the student code of conduct for university polices on academic misconduct. Academic misconduct will not be tolerated and will result in a failing grade on the assignment and/or in the course. The full handbook is available online at: (http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf)
3. All electronic devices (including cell phones) other than a calculator should be set to silent and kept in your book bag or purse throughout class time unless otherwise instructed.
4. Students may not use cell phones, MP3 players, or other electronic devices in place of a calculator. Students may not share calculators during quizzes, tests, or the final exam. Any student caught using an unapproved electronic device during a quiz, test, or the final exam will receive a grade of zero on that assessment and the incidence will be reported to the Dean of Students.
5. A grade of C or better in MATH201 is required to enroll in MATH202.
6. Students required to take MATH104 as a co-requisite, must drop MATH201 if MATH104 is dropped.

SU Deadline:	T 1/22	**Course Withdraw Date:**	W 3/6
Spring Break:	M 3/11 to F 3/15	**Final Exam:**	T 4/30

University student attendance policy
Students are expected to attend classes and should understand that they are responsible for the academic consequences of absence. The student is responsible for all requirements of the course regardless of absences. (http://www2.winthrop.edu/public/policy/fullpolicy.aspx?pid=251)

Homework/Quizzes
Expect homework assignments/quizzes to reinforce the lesson material and prepare you for exams. Expectations will be detailed during class, with some notes added to the course website.

Exams
These may be closed book, no notes, no computer, no cell phone, individual effort events.

Missed quiz/exam policy
I will not give make-up quizzes or exams for those missed. Instead, I'll use the following policy: For all quizzes and course exams, a missed event will result in a recorded zero score until the end of the course. At that time, the average score achieved on all other quizzes will replace a single missed quiz score, and the final exam score (percentage) will replace a single missed exam score. Note that all students must take the final exam for a grade. Moreover, once a student has begun an exam, the event will be graded.

Honors project & presentation
Honors students will complete an additional project on Newton's method, the mean value theorem, and the fundamental theorem of calculus. Students will perform a more in depth study of each, to include computer approximations, visual displays in Mathematica, and appropriate proofs. Students will present their work during the appropriate class sessions tentatively scheduled on the course calendar.

Course Goals and Alignment with the General Education Goals

The course meets the Quantitavive Reasoning requirement through the following goal alignment. Further when not used as the QR requirement, this course meets the Logic, Language, and Semiotics requirement through activities and requirements that require students to: (1) use logic and mathematical information to draw reasonable conclusions and (2) use the symbols and language of mathematics to communicate about problems and present solutions.

Course Goals/SLO	General Education Goals	University Level Competencies
Apply derivatives and integrations to real life problems Use calculus to analyze graphs of functions and to determine extreme values of functions. Use derivatives to solve optimization problems and problems involving rates of change. Demonstrate an understanding of what calculus is and how it compares with pre-calculus. Use limits to investigate the concept of derivatives via slopes of tangent lines to graphs. Use limits to investigate the concept of integration.	• Analyze and use a variety of information gathering techniques • Identify sound and unsound reasoning. • Make valid inferences from data. • Solve mathematical problems of the type necessary for living in today's and tomorrow's world. • Understand that quantitative analysis is important to almost every endeavor of humankind. • Understand the concept and application of quantitative relationships.	**Competency 1** **Winthrop graduates think critically and solve problems.** Winthrop University graduates reason logically, evaluate and use evidence, and solve problems. They seek out and assess relevant information from multiple viewpoints to form well-reasoned conclusions. Winthrop graduates consider the full context and consequences of their decisions and continually reexamine their own critical thinking process, including the strengths and weaknesses of their arguments. **Competency 3** **Winthrop graduates understand the interconnected nature of the world and the time in which they live.** Winthrop University graduates comprehend the historical, social, and global contexts of their disciplines and their lives. They also recognize how their chosen area of study is inextricably linked to other fields. Winthrop graduates collaborate with members of diverse academic, professional, and cultural communities as informed and engaged citizens.

For purposes of departmental and touchstone program assessment of student learning in this course, sections of the final exam may be tabulated for all students. Individual tests and course grades may also be used as an indication of progress toward the above goals.

Course Calendar

The following is a tentative guideline, as I want to keep the flexibility to modify the pace and add or remove topics as appropriate. Exams do not share this flexibility -- this will allow more effective planning by all.

January 7	1.1	Limits
9	1.2	Computing limits
11		
14*	1.3	Limits at infinity
16	1.5, 1.6	Continuity
18*	2.1	Tangent lines & rates of change
23		
25	2.2	The derivative function
28	2.3	Techniques of differentiation
30	2.4	Product & quotient rules
February 1	Exam 1	
4*	2.5	Derivatives of trigonometric functions
6	2.6	The chain rule
8		
11*	3.1	Implicit differentiation
13	3.2	Derivatives of logarithmic functions
15	3.3	Derivatives of exponential & inverse trigonometric functions
18*		
20	3.4	Related rates
22		
25	Exam 2	
27	3.5	Local linear approximations
March 1	3.6	L'Hôpital's rule & indeterminate forms
4*		
6	4.1	Increase, decrease, & concavity
8		
18*	4.2	Relative extrema
20	4.4	Absolute extrema
22	4.5	Applied extrema problems
25		
27	Exam 3	
29	4.7/8	Newton's method & the mean value theorem
April 1*	5.2	The indefinite integral
3	5.3	Integration by substitution
5		
8*	5.4/5	The definite integral
10	5.6	The fundamental theorem of calculus
12		
15	5.8	Average value and its applications
17	5.9	Evaluating definite integrals by substitution
19	Exam 4	
22*	Review	
30	Final Exam	3 – 5:30p

*Homework quiz