TMATH 124   Winter Term 2014

UH 8:00-10:05 AM JOY 110

Lecturer: Ruth Vanderpool

Office Hours: UH 1:30-2:30PM

@ TLC Snoqualmie 260

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Course Description & Objectives:

TMATH 124 is a calculus course studying the mathematics of motion and change and its applications. Topics include advanced functions and their limits, maximums and minimums, rates of change (derivatives), and areas (integrals).

By the end of the course students should be able to:

1. apply precalculus concepts in the calculus setting to solve problems
2. compute limits
3. determine if a function is continuous
4. find the derivative using its definition
5. differentiate algebraic, exponential, trigonometric, and logarithmic functions, as well as combinations of these functions and their inverses
6. apply differentiation techniques to find tangent lines, rates of change, and local extrema
7. set up and solve related rates and optimization problems
8. apply differentiation to find information about a function's graph
9. demonstrate the relationship between derivatives and integrals by applying the Fundamental Theorem of Calculus

The course supports the following department Student Learning Objectives:

- (Env. Sci.) Cultivate skills critical to interpreting scientific concepts for public under- standing, including familiarity with the scientific method, information literacy, statis- tical data analysis, hypothesis formulation, and conceptual modeling, research project design and working collaboratively.
- (Env. Sci.) Participate in engaged inquiry as a means of connection classroom learning to real-world environmental problem solving and establishing the skills needed for life- long learning.
- (Env. Sci) Develop advanced scientific skills necessary to achieve an understanding of and solutions to environmental problems including physical and biological measurement techniques, statistical data analysis, hypothesis formulation and conceptual modeling, research project design and working collaboratively.
- (PPE) Students will strengthen their analytic skills
- (PPE) Students will develop their ability to write with style and precision.
- (PPE) Students will become more competent with quantitative analysis.
- (PPE) Student will develop their ethical and logical reasoning.

Useful Items:

- Text: Details including the ISBN and some pricing data is posted on the class website.
  If you plan to take TMATH 125 *and* 126 you need:
  Calculus: Early Transcendentals 7$^{\text{th}}$ ed. by James Stewart.
  If you are not going to take TMATH 126 you can use:
  Single Variable Calculus: Early Transcendentals 7$^{\text{th}}$ ed. by James Stewart.
- Calculators: The department recommends the use of the TI 36X Pro and prohibits the use of graphing calculators for this course. Thus, only scientific calculators (that cannot access the internet) are allowed for exams and quizzes.

Important Dates:

1/29	Exam I	1/11	Last day alter your schedule with no fees
2/19	Exam II	1/16	Last day to add a class
3/17	Final (8:00-10:05am)	2/22	Last day to change grading option

Flipped Course Description: This course has been structured "upside down". That
is, instead of coming to class to listen to a lecture and working on problems outside of class, you will listen to the lecture outside of class and work on problems in class! You are responsible for either reading the textbook section or viewing the lectures (posted on YouTube) and starting the homework for the day's sections *before* coming to to class.

At the start of each class 30 minutes is set aside so that students can ask questions about materials surrounding the day's sections (this includes the textbook, videos, WebHW, and WrittenHW). To make the best use of this period I advise you to copy down the questions you have and bring them to class. Following this the class will take a 15 minute Concept Check to provide feedback on what material needs more attention. The remainder of the class will be spent working on worksheets that focus on more complex applications.

Concept Check: The Concept Checks are 15 minute (almost) daily sets of 2-5 simple
questions from the homework. The idea is to make sure you understand the major concepts from the sections of the day. You can use any resources from the class except your peers to complete them. Concept Checks are graded as soon as you turn them in and, if time remains, you can redo problems to earn full marks. These should be taken home and used to help guide your studies. No makeup concept checks are possible for missed ones, but I will drop two to give you some flexibility.

Quizzes:

A quiz is given every week on Thursdays over the material covered from the previous week. Generally you will be given 20 to 25 minutes for the quizzes after the homework question period is over on Thursdays. No make up quizzes, unless previously arranged, will be given, but I will drop the lowest scoring quiz so that you have some flexibility.

Homework Policy:

Two homework assignments will be posted every week on WebAssign. One assignment will be due at 8pm on *Wednesday* and the second will be due at 8pm *Friday*. Each assignment will be announced in class and posted on the calendar (found on the class website `http://faculty.washington.edu/rvanderp/`). *Many assignments are due on days that the class does not meet.* Note that sometimes WebAssign randomizes the numbers so that individuals may have slightly different problems. Thus, when the class is working on a problem from the WebHW, it may not match your specific problem, but the techniques used will usually still apply.

To access WebAssign follow the steps below:

1. Browse to WebAssign through the course website or manually type in the address: `http://webassign.net/login.html`
2. Click on "I have a Class Key" button.
3. Enter "uwt 4499 0782" and hit Submit.
4. If you already have a WebAssign account, type in your login information, if not, create an account and log in. Note that your institution should be "uwt".
5. If you cannot log into WebAssign, email me as soon as possible. You will not be granted extensions if you cite accessibility issues in the few hours before an assignment is due.

When you first log in you will see a notice about a grace period and payment options. You can register with an Access Code card (available in the enhanced WebAssign textbook) or you can buy an Access Code online with a credit card. After the grace period you will again see the notice and you will not be able to to continue without entering an Access Code.

I suggest you post any homework questions on the WebAssign forum labeled "WebHW Questions & Help". This discussion board gives you a place to discuss any homework problems that were not addressed in class and, if answering a question correctly, earns you extra credit on your homework scores.

Hand written assignments will also be assigned and collected on *Wednesdays. If completed early, you may turn these in to the Homework folder on Tuesday at the end of class*, otherwise slide your *stapled* assignment under my office door in GWP 430 by 8pm on Wednesday.

If you miss class it is your responsibility to find out what material and homework you are responsible for. Your homework is expected to be written up neatly, clearly, and completely. No partial credit is given on individual problems so I suggest that you make your final answer and its required supporting work, easy to find and identify.

After receiving your corrected homework you are given one week to turn in a rewrite. Answers are marked only as right or wrong so you are responsible for finding and correcting your mistakes. I am available to help answer questions during office hours. Rewrites must be clearly marked as such and stapled on top of the original work with the section number clearly visible.

Grades:
The following weights will be used to calculate your percentage in the course. The function f takes your percentage in the course and returns your grade on a 4. scale.

WeBWork assignments	10%
Handwritten assignments	15%
Concept Checks	10%
Quizzes	10%
2 Exams	30%
Final	25%

$$f(x) = \begin{cases} 4.0 & \text{if } 90 < x \\ .1x - 5 & \text{if } 57 \le x \le 90 \\ 0 & \text{if } x < 57 \end{cases}$$

Outside Resources:

Come visit me in the Teaching & Learning Center (TLC) for office hours! If you are unable to make my posted office hours, please let me know and I will try to work with your schedule. Also remember that you are not alone in this class and your peers are a valuable (and often underutilized) resource.

Visit the TLC! Seminars designed for TMATH 124 students will be announced and regularly held throughout the term. Additionally math tutors are available Monday through Thursday from 10am-6pm. Complete information is available at `http://www.tacoma.uw.edu/teaching-learning-center/teaching-learning-center`.

Notes:

- Emails sent after 4pm may not receive a response until the next day. UW's policy is: `http://www.tacoma.washington.edu/policies_procedures/E-mail_Policy.pdf`
- There will be no tolerance for cheating. All Exams, Concept Checks Quizzes are to be done individually unless otherwise specified. You are encouraged, however, to work together on the homework and rewrites and form study groups outside of class.
- The University of Washington Tacoma is committed to making physical facilities and instructional programs accessible to students with disabilities. Disability Support Services (DSS) functions as the focal point for coordination of services for students with disabilities. In compliance with Title II of the Americans with Disabilities Act, any enrolled student at UW Tacoma who has an appropriately documented physical, emotional, or mental disability that "substantially limits one or more major life activities [including walking, seeing, hearing, speaking, breathing, learning, and working]," is eligible for services from DSS. If you are wondering if you may be eligible for accommodations on our campus, please contact the DSS reception desk at 692-4522.
- The Counseling Center offers short-term, problem-focused counseling to UW Tacoma students who may feel overwhelmed by the responsibilities of college, work, family, and relationships. Counselors are available to help students cope with stresses and personal issues that may interfere with their ability to perform in school. The service is provided confidentially and without additional charge to currently enrolled undergraduate and graduate students. To schedule an appointment, please call 692-4522 or stop by the Student Counseling Center (SCC), located in MAT 354.
- While I have attempted to make this syllabus as complete as possible, adjustments will be made throughout the course. Announcements will be made during class and it is the responsibility of the student to keep updated if class is missed.