

TMATH 124

Autumn Term 2018

UH 1:30-3:30 PM BB 107

Lecturer: Ruth Vanderpool

Office Hours: UW 11:30-Noon & H 10:30-11:30AM

@TLC Snoqualmie 2nd floor

SLN 22337/22338

Office: MDS 303C

Phone: 253-692-4310

e-mail: rvanderp@uw.edu

<http://faculty.washington.edu/rvanderp/>

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 calculus concepts to solve business, economics, biology, chemistry, and physics problems
9. apply differentiation to find information about a function's graph
10. 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 understanding, including familiarity with the scientific method, information literacy, statistical 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.
- (BIOMED) The ability to apply statistics and other mathematical approaches to examine biological systems.

Useful Items:

- Text: Details are posted on the class website. *Calculus: Early Transcendental Functions* 6th ed. by Ron Larson, Bruce H. Edwards, Cengage Learning, 2015
- Calculators: The department recommends the use of the TI 36X Pro. Calculators that cannot access the internet are allowed for exams and quizzes. Available resources:

| Location | Type/Model | # Available | Duration of Checkout |
|----------|---------------------------|-------------|----------------------|
| Library | TI-36X Pro (non-graphing) | 39 | 4 weeks |
| Library | TI-83 (graphing) | 31 | 4 weeks |

Important Dates:

| | | | |
|-------|---------------------|-------|---|
| 10/18 | Exam I | 10/2 | Last day alter your schedule with no fees |
| 11/8 | Exam II | 10/16 | Last day to add a class |
| 12/11 | Final (1:30-3:30pm) | 11/13 | Last day to change grading option |

Opportunities for Mastery: The details will follow but please note the *many* avenues available to master the material!

- WrittenHW & WebAssignHW allow multiple attempts for full credit.
- Discussion board responses improve WrittenHW or WebAssignHW averages.
- Group presentations before each exam can add up to 4% to your exam average.

Social Expectations: You are expected to work regularly with others in this class and thus need to make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

Activity Procedure: Activity sheets are used almost every day of class to give you an opportunity to work with the material. *Usually* these will not be collected or marked but the group will be asked to post their work & answer to one of the questions on the board. This will allow the class to see the answer as well as other methods to solving problems. (There is *always* more than one way to find a solution!)

Homework Policy:

Two homework assignments will be posted every week on WebAssign. The assignment will be due at 4pm on *Wednesdays* and *Fridays*. Each assignment will be announced in class and posted on the calendar (found on the class website <http://faculty.washington.edu/rvanderp/>). Ten minutes will be set aside in each class to answer homework questions from the online system. To make the best use of this period I advise you to copy down the questions before class since WebAssign often randomizes the numbers so that individuals have slightly different problems. Note then that when answering questions, I may not be considering your specific problem, but the techniques 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 “Enroll with a Class Key” button in the top right.
3. Enter “uwt 1706 9093” and hit Submit. Confirm the class.
4. If you already have a WebAssign account, type in your login information, if not, create an account and log in.
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 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 continue without entering an Access Code.

Please post any homework questions on the WebAssign forum. This discussion board gives you a place to discuss any homework problems that were not addressed in class and, if answering a question correctly, can earn you extra credit on your homework scores. WebHW extensions as are given freely before Exams if requested.

Hand written assignments will also be assigned and generally collected on *Wednesdays*. An additional ten minutes of class on Tuesdays will be reserved to address questions from the handwritten assignments. *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 MDS 303C by 4pm on Wednesday.

You are responsible to find out what material was covered and assignments given if you miss class. Your homework is expected to be written up neatly, clearly, and completely. No partial credit is given on individual problems so make your final answer and its required supporting work, easy to find and identify. No extensions are given for written homework.

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, but no additional class time will be dedicated to that homework assignment. Rewrites must be clearly marked as such and stapled on top of the original work with the section number clearly visible.

Quizzes: A quiz is given every week at the instructor’s discretion. Generally you will be given 15 to 20 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.

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 | 15% | $f(x) = \begin{cases} 4.0 & \text{if } 90 < x \\ .1x - 5 & \text{if } 57 \leq x \leq 90 \\ 0 & \text{if } x < 57 \end{cases}$ |
| Handwritten assignments | 15% | |
| Quizzes | 15% | |
| 2 Midterms | 30% | |
| Final | 25% | |

Outside Resources: Come visit me in the TLC (Snoqualmie 260) 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 Teaching & Learning Center (TLC)! Math tutors are available Monday through Thursday from 9am-7pm and Fridays from 9am-3pm. Complete information is available at <http://www.tacoma.uw.edu/teaching-learning-center/teaching-learning-center>.

Notes:

- I do *not* check my email after 4pm. Any questions sent to my email after 4pm may not receive a response until the next morning. The University's e-mail policy is posted at: <http://www.tacoma.uw.edu/information-technology/uw-tacoma-email-policy>
- Bias Reporting: Report an incident of bias or explore how to effectively respond by visiting <http://www.tacoma.uw.edu/reportbias>.
- UW Tacoma is committed to making physical facilities and instructional programs accessible to students with disabilities. Disability Resources for Students (DRS), located in MAT 354, functions as the focal point for coordination for students with disabilities. If you have a physical, emotional, or mental disability that "substantially limits one or more major life activities [including walking, seeing, hearing, speaking, breathing, learning and working]," and require accommodation in this class, please contact DRS at (253)692-4508, email at drsugt@uw.edu or visit <http://www.tacoma.uw.edu/drsugt>.
- 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 students. To schedule an appointment, call 253-692-4522 or stop by the Student Counseling Center (SCC), located in MAT 354.
- Campus Safety Information: <http://www.tacoma.uw.edu/campus-safety/home>. Safety escorts are available 24 hours a day, 7 days a week, there is no time limit. Call the main office line at 253-692-4416.
- Inclement Weather: Always check the UW Tacoma Home Page: official campus closures or delays will be announced there first. Course Announcements and Email regarding assignments and expectations during a closure will follow.
- Infants/Children in Class Policy: If you have no choice but to bring a child or children with you to class, please let me know prior to class. You will be responsible for seeing that the child or children are not disruptive to the class. If you are breastfeeding an infant or expressing milk regularly, you may bring an infant or breast pump to class. If you prefer to breastfeed or breast pump outside of class, you may take time out of class to use the lactation room (GWP 410).
- To plagiarize is to use the ideas-or unique phrasings-without acknowledging that they come from someplace other than you. At the UW Tacoma, plagiarism is a violation of the student conduct code and the consequences are serious. If you have questions about what amounts to plagiarism, seek guidance from faculty and the TLC.
- 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.