Fall Term 2009 TQS 308

MW 10:20-11:35 PM 104 PNK
Lecturer: Ruth Vanderpool
Office Hours: UH 10:30-11:30 AM

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Course Description:

This course introduces vector and matrix algebra as a means to study both linear systems of equations and geometric constructs. Topics such as linear independence, dimension, linear transformations, rank and nullity, and eigenvectors will be covered as the term progresses. TQS 126 is the official prerequisite but the material is of a different character.

This is a 3 credit class thus we *officially* meet for 150 minutes a week. However, I will be available to answer questions until 12:25 on Mondays and Wednesdays.

Required Items:

- Text: *Linear Algebra, A Modern Introduction* 2nd edition by David Poole

Important Dates:

10/21	Midterm 1	10/6	Last day to drop without a W
11/23	Midterm 2	10/9	Last day to add a class
12/16	Final (10:20-11:35am)	7/30	11/15 Last day to withdraw

Notes:

- There will be no tolerance for cheating. If caught, any and all disciplinary action will be pursued. All exams and quizzes are to be done individually unless otherwise specified. You are encouraged, however, to work together on the homework 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.

- 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.

- 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 253.

Homework Policy:

This is traditionally the first time students encounter completely abstract concepts in their studies and they often struggle because of it. Formulas are surprisingly absent here and the homework requires as many words as calculations. Use your homework as a means to internalize the definitions and concepts covered in the course and realize that this will take a great deal more time than computations you may have done in the past for other math courses.

Keep in mind that after working a problem for a while you may still not have an answer and not have time to come back to it later. If this happens try to isolate the issue that is causing you trouble for this specific problem. Consolidate it into a question and write it down in the form of an essay. This question will serve as your answer to the homework question, and if well formed and specific enough, you will receive full credit for your answer.

Homework will be assigned regularly at the beginning of class and collected weekly on Fridays by noon with 20 minutes set aside on Wednesdays to answer homework questions. If completed early, you may turn these in to the Homework folder on Wednesday at the end of class, otherwise slide your *stapled* assignment under my office door in GWP 430 by noon on Friday. No late homework will be accepted.

Group Project:

The group project will center around one of the topics listed below and involve a 2 to 3 page paper and a poster presentation. You may also select your own topic not included on the list below but you must have it approved by my at least a week prior to the due date for the paper. Pairs are preferred but if you would like to work alone you may also do so, but the requirements for the project does not change.

1. Writing Component: The writing component is a 2 to 3 page, double spaced paper that is expected to be written clearly and be free of grammatical mistakes. The paper is due Friday November 12th by noon.

   At least one page will serve as an introduction to the mathematical concepts being discussed. Included in this introduction should be precise definitions and examples to help clarify the concept.

   Each topic has a number of selected problems that are to be completed, written up, and included in the 2 to 3 page paper.

   At least one additional (and interesting) application or property of this topic that was not found within the textbook should be provided in your paper. You will thus have to include a work cited page at the end of your report.

2. Poster Session: November 25 will be a poster session in which groups will take turns presenting their project to the class. Presentations require a poster (although other technology may be substituted) and a five minute summary of your work on the project with the class as your audience. You must be prepared and able to answer questions on your topic.

Group project topics:

Topic	pages	Problems
Cross Product	45	2,3,8b
Codabar System	55	verify the last paragraph by generating examples
Computer Lies	66	1,2
Pivoting Smartly	86	1,2
Allocation of Resources	101	
Balancing Chemical Equations	103	§2.4 # 7,8,11
Network Analysis	104	§2.4 # 16
Electrical networks	106	§2.4 # 19,21
Finite Linear Games	109	§2.4 any two from # 23 -28

Outside Resources:

Come visit me if you have questions! If you are unable to attend my posted office hours but would like to meet, please let me know. I am willing to try and work with your schedule. Also remember that you are not alone in this class and your peers are a valuable (and often underutilized) resource.

The Teaching & Learning Center can offer a number of additional instructional services. Math tutors are available Monday through Thursday from 10am to 6pm. Complete information and updates are available at `http://www.tacoma.washington.edu/tlc/`.

Grades:

The following weights will be used to calculate your grade.

		%	Grade
Homework	25%	100-90	A
Project	15%	89-80	B
Midterms	30%	79-70	C
Final	30%	69-60	D
		59-0	F