



## STMATH 308 – MATRIX ALGEBRA WITH APPLICATIONS

Division of Engineering & Mathematics

School of Science, Technology, Engineering, & Mathematics

Quarter	Section	Days	Time	Room	Credits
Spr 2018	A	T, Th	8:45 am - 10:45 am	UW2-305	5
Spr 2018	B	T, Th	1:15 pm - 3:15 pm	UW2-305	5

**Instructor:** Pietro Paparella    **Website:** <http://faculty.washington.edu/pietrop/>

**Email:** [pietrop@uw.edu](mailto:pietrop@uw.edu)

**Phone:** (425) 352-5347 or 25347 on-campus

**Office:** UW2-332

**Office Hours:** T, Th 11 am - 12 pm and via appt.

**Course website:** <https://canvas.uw.edu/courses/1209479>

**COURSE DESCRIPTION:** Introduces linear algebra, including systems of linear equations, Gaussian elimination, matrices and matrix algebra, vector spaces, subspaces of Euclidean space, linear independence, bases and dimension, orthogonality, eigenvectors, and eigenvalues. Applications include data fitting and the method of least squares. **Pre-requisite:** minimum grade of 2.0 in B CUSP 124.

**TEXTBOOK:** *Linear Algebra and its applications*, 5<sup>th</sup> Edition, by David C. Lay, Steven R. Lay, & Judi J. McDonald. **ISBN-13:** 978-0321982384.

**PARTICIPATION:** It is your responsibility to be informed of all problem-sets, due-dates, quizzes, quiz dates, and any changes made to the syllabus. In addition, please note the following:

- If you experience an emergency situation resulting in an extended absence (e.g., illness or family emergency), contact the Division of Student Affairs as soon as possible.
- Appropriate letters documenting *excused* university absences will be accepted if arranged *prior* to absence.
- Usage of cell phones is not allowed and cell phones must be shut off or kept silent during class.

**QUIZZES:** Beginning the second week of the quarter, a short quiz ( $\approx 30$  minutes in length) covering the material in the textbook and lecture-notes will be given every Tuesday (with the exception of May 1, 2018 due to the midterm). You are allowed to prepare and use an  $3'' \times 5''$  flash-card of notes. Your overall quiz-grade will constitute 60% of your overall grade.

**HOMEWORK:** Problem-sets will be assigned daily but not collected. It is your responsibility to complete the problem-sets. The first twenty-three minutes of each class session will be devoted to answering questions and it is encouraged that students ask questions during this period. If you have what seems to be an excessive amount of questions, please see me during office hours for assistance. You are strongly encouraged to work with other students (in either section) on these problems.

**MIDTERM:** A comprehensive, in-class examination worth 15% is scheduled for of your overall grade is scheduled for Tuesday, May 1, 2018. You are allowed to prepare and use an  $8.5'' \times 11''$  sheet of notes.

**FINAL:** A comprehensive, in-class examination worth 25% is scheduled for of your overall grade is scheduled as follows:

- Section A: 8:45 am - 10:45 am on Thursday June 7, 2018.
- Section B: 1:15 pm - 3:15 pm on Thursday June 7, 2018.

You are allowed to prepare and use an  $8.5'' \times 11''$  sheet of notes for the examination.

**GRADING:** Grade point averages will be assigned via the following table:

%	GPA	%	GPA	%	GPA	%	GPA
95–100	4.0	85–88	3.0–3.3	75–78	2.0–2.3	65–68	1.0–1.3
92–94	3.7–3.9	82–84	2.7–2.9	72–74	1.7–1.9	62–64	0.7–0.9
89–91	3.4–3.6	79–81	2.4–2.6	69–71	1.4–1.6	0–61	0.0

Table 1: %: total points (rounded). GPA: Grade Point Average.

## HOMEWORK LIST:

<i>Section</i>	<i>Problems (odds, unless otherwise stated)</i>
1.1	11 - 21, 25, 27, 28
1.2	5 - 19, 23, 29, 31
1.3	1 - 5, 9 - 17
1.4	1 - 21, 29, 31
1.5	5 - 11, 17, 33, 35
1.7	1 - 19
1.8	2, 3, 5, 9 - 19, 23, 24, 25, 31
1.9	None (main theorem covered)
2.1	1 - 5, 9, 11, 17, 27
2.2	1 - 7, 11, 12, 13, 29, 31, 33
2.3	1 - 7, 13, 17, 33
2.5	13, 17, 25
2.8	TBA
2.9	TBA
3.1	1 - 13, 19 - 29
3.2	5 - 23, 31, 33, 35
5.1	9 - 15, 25
5.2	1 - 15, 19
5.3	1, 3, 9 - 17, 27
6.1	1-17, 21, 24, 27, 29, 31
6.2	7-21, 29, 33
6.3	TBD/TBA
6.4	TBD/TBA
6.5	TBD/TBA

**ACCESS AND ACCOMMODATIONS:** If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS via phone (425-352-5307) or via email ([uwbdrs@uw.edu](mailto:uwbdrs@uw.edu)). DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s), and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

**ACADEMIC INTEGRITY:** Honesty and integrity are essential to the free exchange of ideas and knowledge at UW Bothell. Please note the following:

- Academic integrity will be upheld in this course (please see <http://www.uwb.edu/studentaffairs/studentconduct> and <https://www.uwb.edu/academic/policies/academicconduct/student-guide> for crucial information regarding academic integrity. For the full text of the student conduct code please see <http://apps.leg.wa.gov/WAC/default.aspx?cite=478-120&full=true>. The library at UWB also has an extremely useful website with resources at <http://libguides.uwb.edu/ai>).
- Plagiarism is not tolerated in our classes (the following links will help you learn what constitutes plagiarism: <http://www.uwb.edu/learningtech/plagiarism> and <http://libguides.uwb.edu/content.php?pid=87430&sid=691952>).
- You are responsible for knowing what constitutes a violation of the University of Washington Student Code, and you will be held responsible for any such violations whether they were intentional or not.

**EMERGENCY PREPAREDNESS:** Please see <http://www.uwb.edu/safety/are-you-ready> for detailed information on the following topics: active shooter, inclement weather, bomb threat, crime or violence, earthquake, fire,

hazardous material spill, identity theft, lockdown, medical emergency, online safety, power outage, sexual assault, student in distress, suspicious mail, theft, pandemic flu, and extreme heat.

**FOR OUR VETERANS:** If you are a student who has served in our nations military forces, welcome home, and thank you for your service. I hope that you feel comfortable enough to confidentially self-identify yourself to me so I can help you make a successful transition from the military to higher education.

**INCLEMENT WEATHER:** Please check if the campus may be closed due to weather. Information on suspension of operations will be made public and available through the media. You can learn of campus operations status from the UW Bothell website or by calling the Campus Information Hotline 425.352.3333. You may also sign up with an alert system that will contact you via email or text message if classes are canceled. For more information on the alert process, please see <http://www.uwb.edu/alert>. Class activities will be rescheduled as needed.

**PARENTING-STUDENT RESOURCES:** Parenting students are encouraged to take advantage of the resources provided on campus. These resources include the Parent Union at UWB, the Childcare Assistance Program, on-campus Family Friendly Spaces, priority access at Bright Horizons Bothell and Bothell KinderCare, and back-up/sick care at one of these locations. On campus resources include lactation rooms and baby changing stations. For more detailed information, visit <https://www.uwb.edu/studentaffairs/resources/student-parents> or contact the Parent Union on Facebook: <https://www.facebook.com/PUUWB>.

Children are always welcome in my class. If you are a nursing a child and anticipate needing a lactation-break during class, please let me know during the first week of the quarter so that we can plan accordingly.

**RESPECT FOR DIVERSITY:** Diverse backgrounds, embodiments, and experiences are essential to the critical thinking endeavor at the heart of university education. In STEM and at UW Bothell, students are expected to:

- Respect individual differences which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender presentation, immigration status, national origin, race, religion, sex, sexual orientation, socioeconomic status, and veteran status.
- Engage respectfully in discussion of diverse worldviews and ideologies embedded in course readings, presentations, and artifacts, including those course materials that are at odds with personal beliefs and values.
- Students seeking support around these issues can find more information and resources at <http://www.uwb.edu/diversity>.

#### **STUDENT SUPPORT SERVICES:**

- Career Services: <http://www.uwb.edu/careers>, 425-352-3706
- CSS Tutoring: <http://www.uwb.edu/css/advising>
- IT Helpdesk: <http://uwbit@uw.edu>, 425-352-3456
- Library: <http://library.uwb.edu>, 425-352-5340
- Quantitative Skills Center: <http://www.uwb.edu/qsc>, 425-352-3170
- School of STEM Advising: [stemadv@uw.edu](mailto:stemadv@uw.edu), 425-352-3746
- Student Counseling Services: <http://www.uwb.edu/student services/counseling>, 425-352-3183
- Student Success and Career Services: <http://www.uwb.edu/student services/success services>, 425-352-3427
- Writing and Communication Center: <http://www.uwb.edu/wacc>, 425-352-5253

**DECORUM:** At the UWB we encourage and appreciate our ability to interact closely with our students, and we value faculty-student collaboration very highly. It is also important to maintain an appropriately professional relationship. When addressing faculty, it is more appropriate to refer to them as Dr. X, Prof. X, or Mr./Ms. X as appropriate unless told to do otherwise.