MATH 120: Introduction to Linear Algebra
Summer 2020 Syllabus

Place/Time: Online	**Instructor: Wanchunzi Yu**
Office: TBA	**Office Hours: TBA (Or by appointment)**
Duration: May 25 – June 26	**E-mail: wyu@bridgew.edu**

Course Description
Topics include algebra and geometry of vectors, linear equations, matrices, determinants, basis and dimension, and the use of homogenous coordinates for the matrix representation of linear and geometric transformations and their compositions.

Prerequisites
Mathematics placement test

Texts
Linear Algebra and Its Applications (with Pearson MyMath Lab), 5th Edition, David C. Lay, Steven R. Lay and Judi J. McDonald.
Students must purchase access to Pearson MyMath Lab, but a hard copy of the text is **optional**. Access to Launchpad includes access to an electronic version of the textbook.

Topic Calendar

No.	Sections Covered (Tentative)	Week
1	1.1 Systems of Linear Equations	Week 1
2	1.2 Row Reduction and Echelon Forms	Week 1
3	1.3 Vector Equations	Week 1
4	1.4 The Matrix Equation Ax = b	Week 1
5	1.5 Solution Sets of Linear Systems	Week 1
6	1.6 Applications of Linear Systems	Week 1
7	1.7 Linear Independence	Week 1
8	1.8 Introduction to Linear Transformations	Week 1
9	1.9 The Matrix of a Linear Transformation	Week 1
10	1.10 Linear Models in Business, Science, and Engineering	Week 1

11	2.1 Matrix Operations	Week 2
12	2.2 The Inverse of a Matrix	Week 2
13	2.3 Characterizations of Invertible Matrices	Week 2
14	2.4 Partitioned Matrices	Week 2
15	2.5 Matrix Factorizations	Week 2
16	2.8 Subspaces of Rn	Week 2
17	2.9 Dimension and Rank	Week 2
18	3.1 Introduction to Determinants	Week 2
19	3.2 Properties of Determinants	Week 2
20	3.3 Cramer's Rule, Volume, and Linear Transformations & Midterm Exam	Week 2
21	4.1 Vector Spaces and Subspaces	Week 3
22	4.2 Null Spaces, Column Spaces, and Linear Transformations	Week 3
23	4.3 Linearly Independent Sets; Bases	Week 3
24	4.4 Coordinate Systems	Week 3
25	4.5 The Dimension of a Vector Space	Week 3
26	4.6 Rank	Week 3
27	4.7 Change of Basis	Week 3
28	5.1 Eigenvectors and Eigenvalues	Week 4
29	5.2 The Characteristic Equation	Week 4
30	5.3 Diagonalization	Week 4
31	6.1 Inner Product, Length, and Orthogonality	Week 4
32	6.2 Orthogonal Sets	Week 4
33	6.3 Orthogonal Projections	Week 4
34	6.4 The Gram-Schmidt Process	Week 4

Homework

Homework problems are online, we will use the online resource MyMath Lab for weekly homework assignments and tutorial videos. Make sure to select the correct course, the url for this section link.

Please refer to Launchpad Instruction on the blackboard for more details. Some written homework may also be collected. NO LATE HOMEWORK WILL BE ACCEPTED.

Blackboard
Grades and additional course content will be uploaded to Blackboard. Make sure to check it regularly for updates.

Attendance
Attendance for the course will be the videos with questions on MyMath Lab. For each section, videos with questions are available on Launchpad. Please complete the videos to receive the full attendance credits.

Midterm Exams
You will take 1 mid-term exams during the semester. The exam is given online, time will be limited to class time. Each will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for them is regular attendance and completion of assigned homework. You may have 1 page 8x11 of hand written notes (two sides) on each exam, including a final exam. Make-up exams are only given in case of documented emergencies.

Final Exam
The final exam will take place on online on Blackboard. The official BSU Final Exam Schedule is here.

Grading
Your final course grade will be determined by
Homework: 30%
Attendance: 30%
Midterm: 20%
Final Exam: 20%

Grading Scale:
Letter grades will be assigned as follows:

A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	below 60

The Academic Achievement Center (AAC) provides students with academic services and resources that propel them toward successful and timely degree completion. With all the services available in the center, the AAC is the largest hub of student academic services on campus. Ideally located on the ground floor of the Maxwell Library in the center of the BSU Campus, the AAC is comprised of four major support areas: Academic Advising (*first-semester freshmen*), the Disability Resources Office, Learning Assistance (*tutoring and academic coaching*), and Testing Services. Drop-in learning support areas (*Math Services, Accounting &*

Finance Lab, Writing Studio, Second Language Services), open study space, study rooms available for reserve, and computers are all available for student use. Stop by or call 508-531-1214 for more information about any of the services offered by the Academic Achievement Center.

Disability Resources Office (DRO)
Bridgewater State University is committed to providing equal access to students with documented disabilities. To ensure your access to this course and the BSU community, students with disabilities are encouraged to collaborate with the **Disability Resources Office (DRO)**. Through the DRO, you may initiate the confidential process of requesting reasonable accommodations. The DRO can be reached at Disability_Resources@bridgew.edu or 508.531.2194. If you are granted accommodations, please meet with me confidentially to review how they will be applied in this course.
The DRO also provides alternatively worded syllabus statements, as well as other faculty-specific information, here.

Math Services
Math Services provides free tutoring on a walk-in basis. It is located in the basement of Maxwell Library.

* This syllabus may be amended during the semester.