Stony Brook University | The State University of New York

Math 308 Spring 2014

Schedule
Course Information

Schedule

Week of	Monday's Lecture	Wednesday's Lecture	Homework: Due at the start of Wednesday's lecture.
1/27	3.1	3.2-3.3	None
2/3	Snow Day (I will still hold office hours)	3.4 (Lecture moved to Thurs recitation)	3.1: 2,4,6,8,9,12,17 // 3.2: 12,16,17,18,20,24,25,26 (due 2/6)
2/10	3.5	3.6	3.3: 6,7,8,20,22,24 // 3.4: 9,10,11,12,16,17,19 (due 2/12)
2/17	3.7	3.7	3.5B: 4,7,8,10,15,24,28,41// 3.5C 3,4,5,10,11,13// 3.6A: 2,4,6
2/24	Review	Exam 1	3.6A 11,13 // 3.6B 7,8,9,14 // 3.7A 1,2,8 // 3.7B 2,3,4 // 3.7C 2,3
3/3	10.1-10.2	10.2-10.3	None
3/10	11.1-11.2	11.2-11.3	10.1: 2,3,7,8,11,20,24 // 10.2B: 4,9,18,19,23,26 // 10.3B: 5,6,7,8,9,16
3/17	Spring Break	Spring Break	None
3/24	11.4	11.5-11.6	11.1B 8,9,14,39 // 11.2A 5,6,15,18,20,40 // 11.2C 1,4,8 //11.3B 2,5,6,10
3/31	12.1	12.2	11.4C: 3,4,17,18 // 11.5: 2,19,20,21 // 11.6: 1,4,7,8
4/7	Review	Exam 2	12.1C: 4,7,8 // 12.1D 5,6 // 12.2B: 5,6,7,8,36 (Due 4-14)
4/14	13.1-13.2	13.2	13.1B: 9,10 // 13.2C: 3,4,13,14,21 // 13.2D: 5,6,7,8
4/21	13.3	14.6-14.7	13.3C: 1,2,3,4 // 14.7: 1,4,5
4/28	13.4	Mathematica	13.4A: 1,2,3,4 // 13.4B 2,11 and Mathematica problem.
5/5	Linear Algebra Review	Differential Equations Review Problems	
5/12	Last day of class= Problem Session		

Final Exam: Tuesday May 13, 8:30-11:00PM

The URL for my spring 2015 teaching is here: https://sites.google.com/a/stonybrook.edu/math-312-spring-2015/

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Lecture Information

Instructor: Ben Ward
See syllabus (below) for contact info.

Lecture Time: MW 4:00 -5:20
Frey Hall 224 (thru Jan 29)
Frey Hall 317 (effective Feb 3)

Office Hours: M 1:30-3:00, W 11:00-12:30
Office: Simons Center 403

TA Information

TA: Chengjian Yao
Recitation: Th 4:00-4:53 Lgt Engr Lab 154

TA Office Hours: M 3-4 in S-240 C Math Tower
Email: yao at math dot sunysb dot edu

Exam Information

- Exam 1: February 26 in class. Stay tuned.

Syllabus.pdf (82k)	Benjamin Ward, Jan 28, 2014, 3:16 PM	v.1	
tf.pdf (76k)	Benjamin Ward, May 12, 2014, 3:33 PM	v.1	

Math 308 - Spring 2014

Instructor: Ben Ward
- Email: benjamin.ward@stonybrook.edu
- Office: Simons Center 403
- Office Hours: M 1:30-3:00, W 11:00-12:30, or by appt.

Course Website: https://sites.google.com/a/stonybrook.edu/math308spring2014/

Note that a schedule of the lecture topics and the homework due is available on the site.

Textbook. Multivariable Mathematics, (4th ed.) by Williamson & Trotter. This is the same book that was used in MAT307.

Grading. Grades will be based on homework, two midterm exams and one final exam. The percentage breakdown is:

- Homework - 30%
- Midterm 1 - 20%
- Midterm 2 - 20%
- Final Exam - 30%

Exams. The final exam will take place Tuesday May 13, 8:30-11:00pm. The dates and formats of the midterm exams will be announced soon.

Homework. The homework will be listed on the course website and collected at the beginning of class each Wednesday. Late homeworks will not be accepted.

Students with Disabilities: If you have a physical, psychological, medical, or learning disability that may impact your ability to carry out assigned course work, please contact Disability Support Services at (631) 632-6748 DSS. DSS office: Room 133 in the Humanities Building. DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation is confidential. Arrangements should be made early in the semester so that your needs can be accommodated. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and DSS. For procedures and information go to the DSS website: *http://studentaffairs.stonybrook.edu/dss/*

Academic Integrity: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another persons' work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website:
http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management: Stony Brook University expects students to respect the rights, privleges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits the students' ability to learn. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Handbook and the Faculty-Employee Handbook.

1. The union of two subspaces is a subspace.
2. The intersection of two subspaces is a subspace.
3. The system $\mathbf{x}' = A\mathbf{x}'$ has a unique equilibium solution at 0.
4. The matrix e^{tA} is always invertible.
5. A 2x2 matrix can have 0,1 or 2 real eigenvalues.
6. Every basis is an orthogonal basis with respect to some inner product.
7. If a nonhomogeneous differential equation has solution $y = y_h + y_p$ then y_p is a solution in its own right.
8. If a nonhomogeneous differential equation has solution $y = y_h + y_p$ then y_h is a solution in its own right.
9. If I fill in a 2x2 matrix with random integer values, the chance that the associated function is one-to-one is 100%.
10. If a linear transformation has a repeated eigenvalue, then it does not have an eigenbasis.
11. If a linear transformation has 0 as an eigenvalue then it does not have an eigenbasis.
12. If are one-to-one linear transformations having 0 as an eigenvalue.
13. An oscillating system has a stable equilibrium point.
14. An oscillating system has an asymptotically stable equilibrium point.
15. A first order system of three differential equations has at most three equilibrium points.
16. Every smooth vector field has an equilibrium point.
17. Every smooth vector field on a sphere has an equilibrium point.
18. The Laplace transform is a linear operator.
19. The convolution of two functions defines an inner product.
20. The convolution of two functions is commutative.
21. The function $f(x) = 2x + 1$ is a linear function.
22. The function $f(x) = xe^{-2\pi}$ is a linear function.
23. The function $f(x) = |x|$ is a linear function.
24. Every vector space of dimension 8 has a subspace of dimension 5.
25. The set of vectors of magnitude < 1 forms a subspace.
26. We can do linear algebra just as well by replacing $\mathbb{R}$ with $\mathbb{Q}$.
27. We can do linear algebra just as well by replacing $\mathbb{R}$ with $\mathbb{C}$.
28. We can do linear algebra just as well by replacing $\mathbb{R}$ with $\mathbb{Z}$.
29. There are smooth functions other than c_1e^x which solve $y' = y$, we just can't write then in a simple form.
30. Newton's Law of cooling has an asymptotically stable equilibrium point.
31. The final exam is tomorrow at 8:30 PM