

Syllabus for Math 311

Topics in Applied Mathematics I

Spring 2016

Section 502

Instructor: Volodymyr Nekrashevych

Office: Blocker 513c

Office hours: Office hours: Wednesday and Thursday 2:00 to 3:00 pm or by appointment.

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Class hours:

TR 11:10–12:25 BLOC 117

MATH 311 web page: The web page of the course is

<http://www.math.tamu.edu/~nekrash/teaching/16S/M311.html>

Text. Leon / Colley “Linear Algebra and Vector Calculus”, 1st edition, Pearson.

Leon, “Linear Algebra with Applications”, 8th Edition, Prentice Hall, ISBN 9781256946175.

Topics covered. Systems of linear equations, matrices, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, diagonalization, inner product spaces, orthogonal functions; vector analysis, including gradient, divergence, curl, line and surface integrals, Gauss, Greens and Stokes theorems. *Prerequisites:* MATH 221, MATH 251, or MATH 253; MATH 308 or concurrent enrollment; junior or senior classification or approval of instructor. Credit will not be given for more than one of MATH 304, MATH 309, MATH 311, and MATH 323.

Grading. Your grade will be determined by homework, two midterm exams and a *cumulative* final exam. The weights of each of these are as follows.

Homework	Exam I	Exam II	Final Exam	Total
20 pt weekly	25 pt Feb. 16	25 pt March 29	30 pt May 5, 3:00–5:00 p.m.	100

I may curve any grade and will then compute the course grade by the following rule: *A* for at least 90 points, *B* for at least 80 points, *C* for at least 70 points, *D* for at least 60 points and *F* for less than 60 points.

Plan of lectures.

- 1/19,21 1.1–3. Systems of linear equations.
- 1/26,28 1.4–5. Matrices
- 2/2, 4 2.1–3. Determinants
- 2/9, 11 3.1–4. Vector spaces.
- 2/2, 4 3.5–6. Bases
- 2/16, 18 4.1–3. Linear maps. Exam I.
- 2/23, 25 5.1–4. Inner products.
- 3/1, 3 5.5–6. Gram Schmidt orthogonalization.
- 3/8, 10 Eigenvectors
- 3/22, 24 7, 8. Partial derivatives review.
- 3/29, 31 9. Multiple integrals review. Exam II.
- 4/5, 7 10.1, 11.1–2. Line and surface integrals.
- 4/12, 14 10.2-3, 11.3. Vector calculus theorems.
- 4/19, 21 Applications of vector calculus.
- 4/26, 28 Overview.

Make-up policy: Make-ups for missed quizzes and exams will only be allowed for a university approved excuse in writing. Wherever possible, students should inform the instructor before an exam or quiz is missed. Consistent with University Student Rules , students are required to notify an instructor by the end of the next working day after missing an exam or quiz. Otherwise, they forfeit their rights to a make-up.

Scholastic dishonesty: Copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and will be prosecuted to the full extent allowed by University policy. Collaboration on assignments, either in-class or out-of-class, is forbidden unless permission to do so is granted by your instructor. For more information on university policies regarding scholastic dishonesty, see University Student Rules.

Remember the Aggie Code of Honor: *“An Aggie does not lie, cheat, or steal or tolerate those who do.”*

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