

Topics in Applied Mathematics I

The course

This course, intended primarily for engineering majors, covers topics in linear algebra (matrices, determinants, systems of linear equations, eigenvalues, eigenvectors, diagonalization of symmetric matrices) and vector analysis (normal derivative, gradient, divergence, curl, line and surface integrals, theorems of Green/Gauss/Stokes).

Textbook The required textbook is *Multivariable Mathematics*, fourth edition, by Richard E. Williamson and Hale F. Trotter, 2004, ISBN 0-13-067276-9. The course covers parts of Chapters 1–7 and 9.

Prerequisites The prerequisites for this course are third-semester calculus (one of Math 221, 251, and 253) and differential equations (Math 308).

Venue The course meets 12:00–13:35 daily in room 114 of the Blocker building.

Web site <http://www.math.tamu.edu/~boas/courses/311-2005b/>

The instructor

The instructor is Dr. Harold P. Boas. Office hours are in room 202 of Milner Hall, 10:00–11:00 daily; also by appointment. The office telephone number is 979-845-7269, and the email address is boas@tamu.edu.

Grades

There will be in-class examinations on Thursday, June 9 and on Thursday, June 23. The final examination will be held 13:00–15:00 on Tuesday, July 5. Each of these three examinations will count for 25% of the course grade. The remaining 25% of the course grade will be based on quizzes. Final letter grades will be based on the standard scale: you need an average of 90% for an A, 80% for a B, 70% for a C, 60% for a D.

Academic Integrity Statement

The university is a community of scholars, and intellectual honesty is the fundamental tenet of that community. The Aggie Honor Code states: “An Aggie does not lie, cheat or steal, or tolerate those who do.” Consult the web site of the Aggie Honor System Office (AHSO) at <http://www.tamu.edu/aggiehonor/> for further information.

ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, Cain Hall Room B116 (telephone 979-845-1637, email disability@tamu.edu, web site <http://disability.tamu.edu/>).

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Course Schedule

Date	Activity	Recommended exercises (answers in back of book)
31 May	1.1-1.4, 1.6	<i>pp.</i> 44–45: 5, 7, 11, 13, 17, 27, 29, 35
1 June	2.1A, 2.2	<i>pp.</i> 51–52: 5, 9, 15 <i>p.</i> 69: 9, 13, 19, 23 <i>p.</i> 73: 3, 9, 13
2 June	2.3, 2.4	<i>pp.</i> 80–81: 5, 7, 17, 33, 39 <i>p.</i> 87: 9, 19, 21, 23, 27, 33
3 June	2.5	<i>pp.</i> 98–99: 5, 7, 9, 11, 13, 17, 21, 23
6 June	3.1	<i>pp.</i> 110–111: 3, 5, 7, 9, 11, 15, 17, 19, 23, 27, 29
7 June	3.2, 3.3	<i>p.</i> 118: 7–21 odd <i>pp.</i> 125–126: 5, 7, 13–27 odd
8 June	review	
9 June	Exam 1	
10 June	3.4	<i>pp.</i> 130–131: 5, 7, 9, 13, 17, 19, 21
13 June	3.5	<i>pp.</i> 137–138: 3, 7, 9, 13, 17, 27, 35 <i>p.</i> 142: 3, 5, 7, 11
14 June	3.6	<i>p.</i> 148: 3, 5, 7, 15, 17 <i>pp.</i> 154–155: 3, 7, 11, 13, 15, 19
15 June	3.7	<i>p.</i> 158: 3–13 odd <i>p.</i> 167: 3–13 odd <i>pp.</i> 170–171: 1, 3, 5
16 June	4.1A, 4.4A, 5.3	<i>pp.</i> 182–183: 3, 13, 15, 19 <i>p.</i> 211: 5, 9, 11 <i>pp.</i> 236–237: 3, 7, 11, 13, 19
17 June	5.4	<i>pp.</i> 243–244: 1, 3, 9, 19, 25, 27
20 June	6.2	<i>pp.</i> 269–271: 1, 3, 7, 11, 17 <i>p.</i> 274: 3, 5, 9
21 June	6.5D, 7.4D	<i>pp.</i> 308–309: 3, 5, 9, 11, 15 <i>pp.</i> 346–347: 11, 15, 21, 23, 27
22 June	review	
23 June	Exam 2	
24 June	9.1	<i>pp.</i> 408–409: 3, 7, 9, 11, 15, 17
27 June	9.2	<i>pp.</i> 418–419: 3, 5, 9, 11, 19, 27
28 June	9.3	<i>pp.</i> 429–431: 5, 7, 9, 23, 27, 29
29 June	9.4	<i>pp.</i> 437–438: 1, 5, 7, 9, 13, 15, 17, 19, 23, 25
30 June	9.5	<i>pp.</i> 447–449: 1, 5, 9, 19, 27, 29
1 July	review	
5 July	Final Exam	