

MATH 2177 - MATHEMATICAL TOPICS FOR ENGINEERS (22828)

Autumn 2013, MWF 1:50 - 2:45 (100 Stillman Hall)

Instructor: Feride Tiglay, 750 Mathematics Tower (MW), tiglay.1@osu.edu, 292-5585

Office hours: Monday, Wednesday 10:30–11:30 a.m. and Friday 4–5 p.m.

Teaching Assistants:

Laine Noble (MW 220, 614-292-6805, noble@math.ohio-state.edu)

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Textbook: *Math 2177: Custom Edition for The Ohio State University*, ISBN 1-256-82676-6
(ISBN-13: 978-1-256-82676-7)

Homework/Exams/Grading

Homework is due in your recitation section each Tuesday; the weekly assignments will be posted on Carmen. Late homework will not normally be accepted. (If you require an extension due to severe illness or other unusual circumstances, please contact your TA directly.)

There will be three in-class midterm exams:

- Midterm 1 on Friday, September 20,
- Midterm 2 on Friday, October 18,
- Midterm 3 on Friday, November 15.

The final exam will be held on **Thursday, December 5, 4:00–5:45 p.m.** You are required to take the final exam at the appropriate time, unless you have a conflict as determined by the registrar. Please note these dates when making any travel arrangements; make-up exams will not be offered except in extraordinary circumstances, such as illness certified by a physician or an approved University function. (In such cases, please contact the instructor rather than your TA.)

The course grade will be determined as follows:

- Homework 20%
- Midterm 1 15%
- Midterm 2 15%
- Midterm 3 15%
- Final exam 35%

Your participation in recitation may also be considered in borderline cases.

Calculator Policy: A scientific calculator is recommended for quizzes and exams. Calculators with graphical capabilities and calculators with programming or computer algebra capabilities, such as the TI-89 or the TI-92, will not be allowed during exams and quizzes. Laptops, PDA's, cell phones, and any other communication devices or computers of any kind will not be allowed either.

MSLC Tutoring: The Mathematics and Statistics Learning Center provides free tutoring for Math 2177. Their walk-in hours are 10:20 a.m.–5:05 p.m., Monday through Thursday in 032 Cockins Hall. Additional information (including any changes in location and hours) is available on their website: www.mslc.ohio-state.edu.

Disability Statement: Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone (614) 292-3307 and VRS (614) 429-1334; webpage <http://www.ods.ohio-state.edu>.

Academic Misconduct Statement: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee. For additional information, see the Code of Student Conduct: <http://studentaffairs.osu.edu/resource/csc.asp>

Topics to be covered:

Part I [5 weeks]: Multiple integration and vector calculus (1.8, 1.9, 2.1–2.5, 3.1–3.3) Maximum/minimum problems, Lagrange multipliers, double integrals (in Cartesian and polar coordinates), triple integrals (in Cartesian, cylindrical, and spherical coordinates), line integrals, and conservative vector fields

Part II [3 weeks]: Matrices and linear systems of equations (4.1–4.7, 4.9) Matrix representation of linear systems, Gauss-Jordan elimination, consistent systems of linear equations, matrix operations, linear independence and nonsingular matrices, matrix inverses, applications

Part III [3 weeks]: Second-order differential equations (5.1–5.4, 5C) Complex numbers, linear homogeneous equations, linear nonhomogeneous equations, applications

Part IV [3 weeks]: Fourier series and partial differential equations (6.1–6.5) Method of separation of variables, Fourier series, heat and wave equations