Course title and number	MATH 152 – Engineering Mathematics II
	Sections 543-545
Term	Spring 2016
Class times and location	Lecture: TR 9:35-10:50 HELD 107
	Recitation/Lab:
	Sec 543 M 11:30-12:20 BLOC 124; W 11:30-12:20 CE 222
	Sec 544 M 12:40-1:30 BLOC 123; W 12:40-1:30 CE 134
	Sec 545 M 1:50-2:40 BLOC 126; W 1:50-2:40 CE 223

INSTRUCTOR INFORMATION

Instructor	Dr. Robert Gustafson
My Webpage	www.math.tamu.edu/~robert.gustafson
Departmental Webpage	www.math.tamu.edu/courses/math152
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Office	223D Blocker
Office hours	TR 12:30-2:00 or by appt.

COURSE DESCRIPTION AND PREREQUISITES

Description: (Credit 3) Integration techniques and their applications (area, volumes, work), improper integrals, analytic geometry, vectors, infinite series, power series, Taylor series, computer algebra (Matlab).

Prerequisites: Math 151 or equivalent. Credit will not be given for more than one of Math 148, 152, 172.

Calculator Policy: Calculators are not allowed on exams or quizzes, although they may be used on homework assignments. Use of a calculator on a quiz or exam is considered academic dishonesty and will be reported to the Aggie Honor Council.

LEARNING OUTCOMES

This course is focused on quantitative literacy in mathematics as applied to Engineering and Physics. Upon successful completion of this course, students will be able to:

- Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
- Use substitution, integration by parts, trigonometric substitution, and partial fractions to evaluate definite and indefinite integrals.
- Apply the concepts of limits, convergence, and divergence to evaluate different types of improper integrals.
- Determine convergence or divergence of sequences and series.
- Use Taylor and MacLaurin series to represent functions.
- Use Taylor or MacLaurin series to integrate functions not integrable by conventional methods.
- Understand and apply vector operations such as dot and cross product in three dimensions.
- Use Computer Algebra Systems such as Matlab to solve non-routine problems.

TEXTBOOK AND/OR RESOURCE MATERIAL

●*Textbook:* Stewart, *Calculus: Early Vectors,* Cengage Learning. You paid for an electronic version of this textbook (eBook) through the online system WebAssign when you paid for your courses. Information on how to access your eBook can be found under the "Student Information Page" at http://www.math.tamu.edu/courses/eHomework. You are welcome to purchase a physical copy of the textbook or a loose-leaf copy of the text if you prefer, but this is not required.

●*Lab Manual:* Gilat-Amos, *MATLAB: An Introduction with Applications,* 5th edition, Wiley

GRADING POLICIES

The course grading will be based on the tables below.

•Grade Breakdown

Activity	Date	Percent
Homework	Weekly	10%
Quizzes	Weekly	10%
Labs	See Lab Schedule	5%
Common Exam I	Thursday, Feb 18, 7:30-9:30pm	
Common Exam II	Thursday, Mar 24, 7:30-9:30pm	
Common Exam III	Tuesday, Apr 26, 7:30-9:30pm	
Average of 3 Exams		50%
Final Exam	Thursday, May 5, 12:30-2:30 pm	25%
TOTAL		100%

•Grading Scale

Range	Grade
$90 \leq Average \leq 100$	A
$80 \leq Average < 90$	B
$70 \leq Average < 80$	C
$60 \leq Average < 70$	D
$Average < 60$	F

Attendance and Makeup policies

●**Excused absences**: Attendance is mandatory and may affect your grade. For excused absences we refer the student to Student Rule 7 at http://student-rules.tamu.edu/rule07. Excuses for absences must be substantiated by appropriate documentation. Falsification of documentation is a violation of the Honor Code. Notification *before* the absence is **required** when possible. Otherwise, you must notify me **within 2 working days** of the missed exam, quiz, or assignment to arrange a makeup. Further, an absence due to a non-acute medical service or appointment (such as a regular checkup) is *not* an excused absence.

●**Makeup** exams will be only allowed due to excused absences and the next possible make-up time be chosen from http://www.math.tamu.edu/courses/makeupexams.html. If you foresee the need to be absent during an exam, you **must** notify the instructor in advance.

ADDITIONAL COURSE INFORMATION AND POLICIES

Common Exams: There will be **3 common exams** during the semester. These exams are evening exams taken by all Math 152 students at the same time. Bring your Texas A&M student ID and a pencil to all exams. The location of the common exams will be determined at a later time. The dates for the exams and the *tentative* content are as follows:

Common Exam 1: Thursday, Feb 18, 7:30-9:30pm (through 8.2)

Common Exam 2: Thursday, March 24, 7:30-9:30pm (through 10.2)

Common Exam 3: Tuesday, Tuesday April 26, 7:30-9:30pm (through 11.2)

Final Exam: The final exam will be a cumulative (comprehensive) exam. The day and time of the final exam are determined by the University.

Graded Homework: Graded homework assignments will be primarily done online, but may include the occasional written assignment. Online homework will be done in WebAssign. Access to WebAssign was included in your course fees. Other important information such as how to log in, how to access and take assignments, and the Student Help Request Form can be found at http://www.math.tamu.edu/courses/eHomework. I suggest you bookmark this page and visit it before you log in to WebAssign each time.

Suggested Homework: Math cannot be learned by watching someone else do math. It requires a lot of practice. On the webpage http://www.math.tamu.edu/courses/math152/currenthw.html are listed some suggested homework. I STRONGLY suggest that you do these problems for more practice in addition to the online homework. They will not be collected, but doing them to help you learn the material is very important.

Recitation/Lab: Your section will meet twice weekly with your TA for recitation/lab. On Wednesdays, you will be in recitation. During recitation sessions, your TA will answer questions, review material, and give weekly quizzes for a grade. You must attend the recitation and lab you are registered for. On Mondays, you will be in lab where you will complete MATLAB assignments.

Quizzes: There will be quizzes given weekly on Wednesdays (unless otherwise stated) during recitation by your TA. The best way to prepare for these quizzes is to practice problems by doing the suggested homework and the online homework. There may also be quizzes given periodically during class, either announced or unannounced, as well as take home quizzes.

Lab: On Mondays, you will meet in the computer lab to work on computer assignments using MATLAB. Assignments are posted on the web and are due at the BEGINNING of lab on the designated day. MATLAB assignments will be done in groups and each group will turn in one lab. Labs turned in between 10 minutes after the start of lab and the end of the day will receive a 15% penalty. After this, no late work will be accepted without a University-approved excuse.

Grade Appeals: If you believe an error has been made in grading, you have until the next class period after the exam, quiz, or assignment has been handed back to let me know. Otherwise, you must accept the grade you received.

Classroom Respect: Please refrain from using electronic devices during class. Texting and playing on your phone or computer distracts not only you, but also those around you. If you would like to use a laptop or iPad during class to take notes with, please ask for permission prior to doing so.

Copyright: All printed handouts and web-materials are protected by US Copyright Laws. No multiple copies can be made without written permission by the instructor.

ADDITIONAL HELPFUL LINKS
- Help Sessions — http://www.math.tamu.edu/courses/helpsessions.html
- Week in Reviews — http://www.math.tamu.edu/courses/weekinreview.html
- Academic Calendar — http://registrar.tamu.edu/General/Calendar.aspx
- Final Exam Schedule — http://registrar.tamu.edu/General/FinalSchedule.aspx

COURSE TOPICS (Tentative weekly schedule)

WEEK	TOPIC	SECTIONS COVERED
1	Review of the Fundamental Theorem of Calculus, integration	Sections 6.4–6.5, 7.1

	by substitution, area	
2	Area, volumes by slicing, disks, washers	Sections 7.1–7.2
3	Volume by cylindrical shells, work	Sections 7.3–7.4
4	Average value, integration by parts, trigonometric integrals	Sections 7.5, 8.1–8.2
5	Trigonometric substitution, partial fractions. **Exam 1** (Covers through Section 8.2).	Sections 8.3–8.4
6	Improper integrals, arc length, surface area of revolution	Sections 8.9, 9.3–9.4
7	Sequences, Series	Sections 10.1–10.2
8	Series, convergence tests	Sections 10.2–10.3
9	Absolute convergence, convergence tests. **Exam 2** (Covers through Section 10.2).	Section 10.4
10	Power series, representing functions as power series	Sections 10.5–10.6
11	Taylor and Maclaurin series, applications of Taylor series	Sections 10.7, 10.9
12	3D coordinates, vectors, dot product	Section 11.1–11.2
13	Cross product	Section 11.3
14/15	Polar coordinates. **Exam 3** (Covers through Section 11.2), Review for Final Exam	Section 13.4

AMERICANS WITH DISABILITIES ACT (ADA)

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, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

ACADEMIC INTEGRITY

Aggie Honor Code: "An Aggie does not lie, cheat, or steal, or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.
For additional information please visit: http://aggiehonor.tamu.edu