MATH 5311 Adv. Engineering Math

Instructor: Prof. Regan Beckham
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Office: RBN 4012
Office Hours: TBA(see Canvas), or by appointment
Class Meeting Time: TR 12:30p - 1:50p, RBN 4019

Text: It is recommended that you take notes in class to get the material.
(Supplemental Text, no required, *Advanced Engineering Mathematics* by Erwin Kreyszig)

We will study advanced mathematical concepts needed in the study of engineering. The topics covered cover are partial differential equations, Fourier analysis, complex analysis and optimization. Prerequisites include ordinary differential equations and matrix methods or linear algebra. It will be assumed that you have a mastery of Calculus.

Canvas will be used.

If you chose to take this class you will:
- *Read the notes* – Read the material multiple times.
- *Attend Class* – You should not take this course if you are not committed to attending class.
- *Complete Homework* – Homework completion is vital to the understanding of the material.

Grading Policy
Your final grade will be based on the following:

Exams
There will be **five** 20 point exams throughout the semester.

Note: Your grade will depend exclusively on the scores you receive on your five exams. No exams will be dropped. No extra credit or special assignments will be given. **No exceptions.**
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Your final grade will be no more harsh than the following scale
Percentages
100 - 85 A, below 85 - 70 B, below 70 - 50 C, below 50 - 40 D, below 40 F
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A bit about grading
Below is the grading scheme that will be used for all exam problems. Whether this splits up to each part of a multi-part problem depends on the necessary work to move through each problem.

0 - No progress or relevant information given for the problem
1 - Some progress which could lead to a correct solution
2 - Significant progress, major elements present, partial explanation/proof
3 - Essentially complete and correct solution, with minor gaps, errors, or lack of explanation
4 - Fully correct and complete solution with all relevant information and explanation

UT Tyler Honor Code
To embrace honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Plagiarism and Academic Dishonesty

Any work submitted must represent your own effort!

Make-up Policy

Make-ups for documented absences that are required as part of a UT Tyler obligation (e.g. athletes participating in an event, participating in a debate contest, etc.) or for religious observation will be granted. For all make-ups of this type, prior notification of at least one week and documentation are required.

Classroom Policy

When you attend class you are to be actively engaged in the classroom activity. Also, you are to be respectful of those around you and conduct yourself in a collegial manner. Students not adhering to this may be asked to leave the classroom.

Calculator Policy

Non-graphing calculators will be allowed on tests. It is recommended that you get a TI-30 or equivalent. No calculator cell phone apps will be allowed.

Cell phones, IPODs and other electronic devices

Please set your cell phones and pagers to silent mode. If you are expecting an emergency call, please notify the professor in advance, sit near the door, and answer the phone outside. You will not be allowed to wear an IPOD or other electronic devices during an exam. During tests, cell phones must be turned off and placed in sight on your desk.

A bit about study groups

If you are expecting an In my experience, study groups are most successful when the following is done. The problems should be attempted by the group members before the group meets. If problems are worked from start to finish in the group only the strongest students will benefit. You should limit the amount of outside aid you get in the course. I do not recommend tutoring. If you have questions come see *me*.

Student Learning Outcomes

By the end of this course, the successful student will

— State major theorems, facts, and definitions from the fields of Fourier analysis, partial differential equations, complex variables, and optimization.

— Utilize major theorems, facts, definitions, and methods to solve advanced applied problems in mathematics.

— Model real-world problems and clearly present a written solution in keeping with the written tradition of the discipline.

For University policies concerning Students Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Course Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, and the Social Security and FERPA Statement please see:

http://www.uttyler.edu/academicaffairs/syllabuspolicies.pdf