

MTH 361 A:
Introduction to Partial Differential Equations
Course Syllabus
Fall 2026

INSTRUCTOR: Brent Young
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EXTENSION: 3824
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OFFICE HOURS: MTWF 9:00 – 9:50am, MW 1:00 – 1:50pm

REQUIRED TEXT: *Introduction to Partial Differential Equations*,
Peter Olver,
Springer, NYC NY,
ISBN: 978-3-319-02098-3.

CLASS MEETINGS: MW 3:00pm – 4:15pm in SLC 405

PREREQUISITES: Students enrolled in this class must have successfully completed a course in Ordinary Differential Equations (MTH 211 at Wilkes) and Multivariate Calculus (MTH 212 at Wilkes) with a grade of 2.0 or better.

COURSE DESCRIPTION: Intended for mathematics, physical science, and engineering students. Topics include inner product spaces, operator algebra, eigenvalue problems, Sturm-Liouville theory, Fourier Series, and partial differential equations.

DETAILED OBJECTIVES: Upon successful completion of the course, the student will understand the following topics:

- basic concepts of linear algebra
- inner products and orthogonal functions
- solutions of linear differential equations using operator algebra
- series solutions of differential equations using the Method of Frobenius
- solutions of Sturm-Liouville problems
- Fourier Series
- solutions of partial differential equations and boundary value problems

GRADING: Two midterm exams, two oral exams, and a final exam will be given. In addition, homework assignments will be given regularly. Your final grade will be computed as follows:

- Homework: 20%
- Midterm Exams: 20% each
- Oral Exams: 5% each
- Final Exam: 30%

MAKE-UP EXAMS: Make-up examinations will not be given during the semester. If a circumstance occurs which results in a student missing an exam, a make-up exam can be arranged during the week of finals. Students should make every possible effort to contact the instructor in the event of an emergency.

ATTENDANCE/WITHDRAWAL: Due to the ongoing Covid-19 outbreak, students who are sick or self-quarantining should not attend class, and no documentation is required should you become ill during the semester. All arrangements that can be made to deliver content remotely while a student recovers will be explored!

Given all of that, remember that poor attendance is a major contributor to poor performance in any course! Also remember that all withdrawals must take place **prior to the 10th week of class** unless extreme circumstances exist.