

**Course Syllabus**  
**Topics in Applied Mathematics (Math 4376.01)**  
**Spring 2018**

Class Meeting Time	TT 4:30-5:50
Class Meeting Place	LDB 401
Instructor	Dr. John G. Alford
Office	LDB 417B
Phone	(936) 294-4663
E-Mail	jalford@shsu.edu
Office Hours	MW 3:00-4:00, TT 10:00-11:00, or by appointment

**Course Description**

This course, in conjunction with MTH 3376 (Ordinary Differential Equations), is intended to develop a basic competence in areas of mathematics that are used in solving problems from the physical sciences. In general, topics for Math 4376 may be selected from partial differential equations, multivariable and vector calculus, and complex analysis. Pre-requisite: C or better in Math 3376 or consent of the instructor. This course is 3 credits.

**Course Objectives**

The student is expected to gain an understanding of topics that may include the following.

- derivations of basic partial differential equations (PDEs) arising in science and engineering including the transport equation, the wave equation, the heat equation, Laplace's equation, and Poisson's equation,
- basic analytic methods for solving these equations including Fourier series, eigenfunction expansions, Green's functions, and Fourier transform,
- qualitative analysis and physical interpretations of mathematical results including existence, uniqueness, long time behavior/stability of solutions, using explicit solution formulas, maximum principles, and energy methods.

**Textbook**

Title: *Applied Partial Differential Equations with Fourier Series and Boundary Value Problems (Fifth edition)*, Author: Richard Haberman, Publisher: Pearson

## Course Grade

There will be a number of homework assignments, 2 exams, and a comprehensive final exam. The lowest homework grade will be dropped. If your final exam grade is larger than the smaller of your two unit exams, then your lowest exam grade will be replaced by your final exam grade. You cannot re-take an exam and there are no extra credit assignments. An excused absence (see below) will allow you to make up a homework assignment or unit exam. The weights are as follows:

- Two Exams: **25% each**
- Homework Average: **25%** (drop the lowest homework grade)
- Comprehensive Final Exam: **25%** (replaces the lowest exam grade if larger than this grade)

## Important Dates

- Spring Break is March 12-16.
- The last day to Q drop is Friday, April 6.
- The final exam is on Tuesday, May 8, 6:00-8:00 p.m.

## Calculator

Unless otherwise specified, you may use a graphing calculator on any exam. The exception is that you may **not** use a graphing calculator that has a computer algebra system (e.g. TI-89) on an exam.

## Attendance Policy

You should attend all classes and are responsible for all notes, announcements, assignments, quizzes, and exams. You should notify me via phone message or email as soon as possible as to why you were not in class or will not be attending class. An absence is excused only in cases of medical emergencies, death in the family, or school sponsored events. To excuse an absence, you must provide legitimate documentation (for example, a doctors note) no later than the day that you return to class.

## Further Notes

- Academic Honesty - The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action.  
*[http : //www.shsu.edu/ vaf\\_www/aps/documents/810213.pdf](http://www.shsu.edu/vaf_www/aps/documents/810213.pdf)*

- Religious Holy Days - Students are excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. As a courtesy, it is appreciated if you notify me in advance and in writing of the dates and times that are to be missed so that appropriate arrangements can be made regarding homework and/or exams. [http : //www.shsu.edu/ vaf\\_www/aps/documents/861001.pdf](http://www.shsu.edu/vaf_www/aps/documents/861001.pdf)
- Disability Issues - It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.  
  
SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>
- Classroom Etiquette - Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. **Cell phones and text messaging devices are prohibited during class time unless used for emergency purposes.** During an exam, your cell phone or text messenger should be stored securely in such a way that it cannot be seen or used. The visible presence of such a device during an exam may result in a zero for the exam and is considered de facto evidence of cheating. You may use your cell phone for emergency notification purposes during an exam if you notify me prior to such use. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy. [http : //www.shsu.edu/students/guide/StudentGuidelines2010 – 2012.pdf#page = 29](http://www.shsu.edu/students/guide/StudentGuidelines2010-2012.pdf#page=29)
- Visitors in the Classroom - Only registered students may attend class. Exceptions can be made on a case-by-case basis. In all cases, visitors must not present a disruption to the class by their attendance.