Instructor:  Haidong Wu
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Phone:  662-915-7416
Office:  Hume 316
Office Hours:  10:30-11:15,  2:15-3:00  W,  10:15-11:00 TH or by appointment
Class Time:  T Th 11-12:15
Location:  Hume 111

Course description/learning objectives:
This course is an introduction to ordinary differential equations, which are an important part of mathematics and are also one of the key mathematical tools used in science and engineering. We intend to cover Chapters 1, 2, 4, and 7 of the textbook, together with some applications from other chapters (parts of Chapters 3, 5, 6). This includes first-order differential equations and their applications, linear differential equations of higher order, and the Laplace transform. The successful students will acquire a good knowledge of the topics studied in the course, being able to classify (i.e., recognize the type of) a differential equation and apply proper methods to solve it. This course will prepare students for those higher level courses in mathematics, physics, engineering, and economics, where a basic understanding of ordinary differential equations is needed. The main objectives of this course are to enable students to understand concepts, develop skills and learn problem solving techniques to solve some ordinary differential equations, and enhance students’ critical thinking, mathematical reasoning, and analytical reasoning abilities.

Homework/quizzes, tests, and final exam:

- There will be three tests, each counting 100 points.
- The final examination is comprehensive and will count 200 points.
- There will be eight quizzes, each containing two questions and worth 10 points.
- The questions on the quizzes, tests, and final exam will be similar in format to the examples in class and the homework problems.
- The lowest of the test grades will be replaced by the final exam percentage provided that this percentage is higher.

Grading policy:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>≥ 93%</td>
</tr>
<tr>
<td>A-</td>
<td>≥ 90%</td>
</tr>
<tr>
<td>B+</td>
<td>≥ 87%</td>
</tr>
<tr>
<td>B</td>
<td>≥ 83%</td>
</tr>
<tr>
<td>B-</td>
<td>≥ 80%</td>
</tr>
<tr>
<td>C+</td>
<td>≥ 77%</td>
</tr>
<tr>
<td>C</td>
<td>≥ 70%</td>
</tr>
<tr>
<td>D</td>
<td>≥ 60%</td>
</tr>
<tr>
<td>F</td>
<td>≤ 59%</td>
</tr>
</tbody>
</table>

Attendance policy:
• Students are permitted 3 (for MWF classes) or 2 (for TT classes) unexcused absences during the semester. After that, 3 points are deducted for each absence, in addition to any points missed from in-class assignments.
• Attendance is directly correlated with course success. You are expected to attend all classes.
• Attendance is directly correlated with course success. You are expected to attend all classes and to be on time and prepared. Attendance will be recorded daily. It is the student’s responsibility to make sure his/her attendance record is correct.
• Students who do not attend class within the first two weeks will be dropped automatically.

IMPORTANT POLICY:

1. Students must show all work on tests and the final exam in order to receive full credit.
2. Each student is responsible for all work missed due to absences.
3. If a test is missed for any reason, a grade of 0 will be given. There will be no make up tests given for any reason other than official university functions. Any student who must miss an exam because of an official university function may reschedule the test before the test is originally scheduled. This is the only rescheduling allowed.
4. An 'I' grade will not be given without the permission of the Department of Mathematics.
5. Any student having three or more final examinations scheduled for the same day will arrange with the instructor to take the noon examination or the 7:30 p.m. examination on some other mutually satisfactory date.
6. Every student must take the final exam at the time scheduled. The only exceptions are those students affected by # 3 or # 5 above.

CALCULATORS: Electronic calculators and cellular phones are prohibited on tests and quizzes.

ELECTRONIC DEVICES: All cellular phones and other electronic equipment should be turned off during the class period.

CHEATING: The following statement is the policy of the Department of Mathematics regarding cheating:

Offenses: Cheating on any exam or quiz, theft or attempted theft of exam questions, possession of exam questions prior to the time for examination, or the use of an illegal calculator on tests or quizzes shall all be offenses subject to appropriate penalties.

Penalties: The penalty for commission of any offense set out above is failure in the course and, subject to the approval of the Chancellor, dismissal or suspension from the University.

WITHDRAWAL DEADLINE: Monday 10/7/2019

After the Course Withdrawal Deadline, courses dropped will be recorded on University records and the W grade will be recorded if the student is not failing the course at the time of withdrawal; otherwise the grade recorded will be F. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency as determined by the academic dean; dropping a course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student is changing his/her major.
DISABILITY ACCESS AND INCLUSION: The University of Mississippi is committed to the creation of inclusive learning environments for all students. If there are aspects of the instruction or design of this course that result in barriers to your full inclusion and participation, or to accurate assessment of your achievement, please contact the course instructor as soon as possible. Barriers may include, but are not necessarily limited to, timed exams and in-class assignments, difficulty with the acquisition of lecture content, inaccessible web content, and the use of non-captioned or non-transcribed video and audio files. If you are approved through SDS, you must log in to your Rebel Access portal at [https://sds.olemiss.edu](https://sds.olemiss.edu) to request approved accommodations. If you are NOT approved through SDS, you must contact Student Disability Services at 662-915-7128 so the office can: 1. determine your eligibility for accommodations, 2. disseminate to your instructors a Faculty Notification Letter, 3. facilitate the removal of barriers, and 4. ensure you have equal access to the same opportunities for success that are available to all students.

Tentative Test and Quiz Schedule:

**Tests: 9/19, 10/17, 11/14**
**Quizzes:** September 3, 10, 26, October 3, 10, 24, 31 November 7, 21.

**Test 1:** Tuesday, September 19  
Chapters 2: First-order differential equations.  
Separable equations (section 2.2).  
Linear equations (section 2.5).  
Exact equations (section 2.4).  
Homogeneous equations (section 2.3).  
Bernoulli’s equation (section 2.6).

**Test 2:** Thursday, October 17  
Chapters 4 and 6: Linear differential equations of higher order.  
Linear dependence/independence and Wronskian of solutions (section 4.1).  
Constructing a second solution from a known solution (section 4.2).  
Homogeneous linear equations with constant coefficients (section 4.3).  
Method of undetermined coefficients (section 4.4).

**Test 3:** Thursday, November 14  
Method of variation of parameters (section 4.7).  
Cauchy-Euler equations (section 6.1).  
Laplace transform and its inverse (sections 7.1 and 7.2).  
The first translation theorem and its inverse (section 7.3).  

**New material that will appear on the final:**  
Chapter 7: Laplace transform.  
Second translation theorem and its inverse, derivatives of transforms (section 7.3).  
Transform of derivatives and initial-value problems by using the Laplace transform (section 7.5).

**Final exam** is comprehensive.  
**SPECIAL DATES:**  
Classes end: 12/6, 2019  
Final Exam: Tuesday, 12-3 pm, Dec. 10, 2019