Syllabus for MTH 852
Numerical methods for ordinary differential equations
Spring 2017

Course:

Lecture: MWF 9:10 - 10:00 AM in C517 Wells Hall

Professor: Yingda Cheng

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Office Hours: MW 1:30 PM - 3:00 PM or by appointment.


Course description: This course is concerned with the development and analysis of numerical methods for ordinary differential equations (ODEs). In particular, we will focus on a class of numerical schemes known as finite difference methods. Initial value problem topics include, stability, consistency and convergence of single step and multi step methods for both non-stiff and stiff IVP's. Additional topics may be discussed.

Prerequisites: 1. an undergraduate course in ODEs, math 850.
2. knowledge in a programming language (e.g., Fortran, C/C++, or MATLAB).

Grading:
Your grade will be assigned based on your performance in these components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>50%</td>
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<tr>
<td>In class midterm</td>
<td>25%</td>
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<tr>
<td>Take-home final exam</td>
<td>25%</td>
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Homework: There will be biweekly homework assignments. Homework is due in class on the specified date. Each day an assignment is late, a 10% penalty will be assessed.

Exams: Two Exams, one in class and one take-home final. The take-home final will be given out one week before the end of the term and will be due by 5 pm on the date that the registrar once scheduled our final exam.

Attendance: Students are expected to attend all class meetings and are responsible for all of the material covered in class. Any changes in this syllabus or in the scheduling of exams, etc. will be announced during class meetings.

Academic Dishonesty: Academic dishonesty is considered a serious offense at MSU. Students caught cheating may face failure in the course and an administrative sanction which may include suspension or expulsion from the university. See the MSU Academic Dishonesty Policies.

Important Dates:
01/09/2017: Class begins.
01/13/2017: Open adds end at 8:00 pm.
01/16/2017: MLK day. No class. University Closed.
02/03/2017: Last day to drop a course with 100% refund. No refunds after this date.
03/01/2017: Last day to drop with no grade reported, at 8:00 pm. Middle of Semester.
03/06/2017 - 03/10/2017: Spring break.
04/28/2017: Last day of class.