Syllabus for MATH 3860: Elementary Differential Equations
Spring 2012

Time and Place: Section 004: MW 5:45pm-7:00pm, SM 2050.

Instructor: Mr. Dibyajyoti Deb (I go by Deb), UH 2030C, dibyajyoti.deb@utoledo.edu

Course Webpage: http://www.math.utoledo.edu/∼ddeb (Click on Teaching and then the appropriate course link).

Phone: 419-530-2789.

Office Hours: MW - 3:00pm-5:30pm.

Text: William E. Boyce and Richard C. DiPrima, *Elementary Differential Equations, 9th ed.*

Prerequisites: Passing grade in MATH 2850 or MATH 2950. Students who enroll in MATH 3860 but have not passed either prerequisite may be administratively dropped from the course.

Attendance: Attendance is essential for success in the course. You are expected to be present in every lecture. Random attendance will be taken which will count towards extra credits.

Resources: Mathematics tutoring is provided by the Mathematics Learning and Resource Center (http://www.utoledo.edu/utlc/lec/) that is located in the basement of the Carlson Library - phone ext. 2176. It operates on a walk-in basis. MLRC also provides tutoring on some residence halls. Tutoring Hours: M/R 9am-8pm, T/W 9am-9pm, F 9am-2pm.

Academic Honesty: All students are responsible for maintaining the highest standards of honesty and integrity in every phase of their academic careers. The penalties for academic dishonesty are very severe and ignorance is not an acceptable defense. Academic dishonesty will be dealt in a manner consistent with the university's policy statement on academic dishonesty (see http://www.utoledo.edu/dl/students/dishonesty.html for more information).

Course overview: Ordinary differential equations (ODE) have long been a fundamental part of the mathematical vocabulary used to describe many physical phenomena.

Most of this course will emphasize exact solution techniques, and we may briefly consider qualitative and numerical methods as time allows. Material to be covered includes most of Chapter 1 (Introduction), Chapter 2 (First-order differential equations), Chapter 3 (Second-order linear equations), Chapter 4

(Higher-order linear equations), Chapter 5 (Series solutions of Second-order linear equations) and Chapter 6 (The Laplace transform).

Homework Assignment and Quizzes: Homework will be assigned for each lecture, and will be collected on specific due dates mentioned below. There will be 7 homework assignments collected from which only the best 5 will count towards your grade. Missing two or scoring low on them will not count against you, therefore late homework will not be accepted. A Homework set is out of 30 points, and in total the five homework sets are worth 150 points. Therefore it is essential you work the homework problems on your own.

Short quizzes of 5–15 minutes will be given in lectures on specific dates based on the homework problems. There will be 7 quizzes given during the semester from which only the best 5 will count towards your grade. Missing two or scoring low on them will not count against you, therefore there will be no make-up quizzes. Each quiz is out of 30 points, and in total quizzes are worth 150 points.

Extra Credits: There will be 3 extra credit homework assignments during the semester, in total worth 30 points and attendance worth 10 points for a total of 40 extra credit points.

Tentative Course Schedule
Week 1, (1/9-1/13), Sections 1.1, 1.2, 1.3, 2.1;
Week 2, (1/16-1/20), Sections 2.2, 2.3;
Week 3, (1/23-1/27), Sections 2.4, 2.6;
Week 4, (1/30-2/3), Sections 2.8, 3.1;
Week 5, (2/6-2/10), Sections 3.2, 3.3;
Week 6, (2/13-2/17), Sections 3.4, 3.5;
Week 7, (2/20-2/24), Section 3.6, Exam 1;
Week 8, (2/27-3/2), Sections 4.1, 4.2;
Week 9, (3/5-3/9), No classes. (Spring Break);
Week 10, (3/12-3/16), Sections 4.3, 4,4;
Week 11, (3/19-3/23), Sections 6.1, 6.2;
Week 12, (3/26-3/30), Sections 6.3, 6.4, 6.5, 6.6;
Week 13, (4/2-4/6), Exam 2, Sections 5.1;
Week 14, (4/9-4/13), Sections 5.2, 5.3;
Week 15, (4/16-4/20), Sections 5.4, If time permits Sections 5.5, 5.6;
Week 16, (4/23-4/27), Review;

Tentative Homework/Quiz schedule and due dates
Homework 1/Quiz 1, 1/25, W, {Sections 1.1-1.3, 2.1-2.3}
Homework 2/Quiz 2, 2/1, W, {Sections 2.4, 2.6}
Extra Credit Homework 1/Quiz 3, 2/15, W, {Sections 2.8, 3.1-3.3}
Homework 3, 2/22, W, {Sections 3.4, 3.5, 3.6}
Homework 4/Quiz 4, 3/14, W, {Sections 4.1, 4.2}
Extra Credit Homework 2, 3/21, W, {Sections 4.3, 4.4}

Homework 5/Quiz 5, 3/28, W, {Sections 6.1, 6.2}
Homework 6/Quiz 6, 4/4, W, {Sections 6.3-6.6}
Extra Credit Homework 3, 4/11, W, {Section 5.1}
Homework 7/Quiz 7, 4/25, W, {Sections 5.2, 5.3, 5.4}

Tentative Exam Schedule
Exam 1, 22nd Feb., W, {Sections 1.1-1.3, 2.1-2.4, 2.6, 2.8, 3.1-3.6}
Exam 2, 2nd Apr., M, {Sections 4.1-4.4, 6.1-6.6}
Final Exam, 30th Apr., M, 5:00pm-7:00pm, {Cumulative}

Grading
The final grade will be based on 700 points:
In class tests ($100 \times 2 = 200$)
Final exam (200)
Quizzes ($30 \times 5 = 150$)
Homework ($30 \times 5 = 150$)
and the following scale: $A = 93\%+$, $A- = 90\% \leq x < 93\%$, $B+ = 87\% \leq x < 90\%$, $B = 83\% \leq x < 87\%$, etc.

Various Policies:

- Except in cases of documented emergencies, there will be **no makeups** of exams. Documentation should be provided or atleast contacted before the exam.
- The Final Exam is cumulative and will cover everything that has been taught in the course (unless otherwise announced).

Important Dates:

- No classes on Jan. 16, Mar. 5-9.
- Last Day to Add/Drop - Jan. 23.
- Last Day to Withdraw - Mar. 23.
- Exam 1 - 22nd Feb. 2012.
- Exam 2 - 2nd Apr. 2012.
- Final Exam - 30th Apr. 2012.