**Math 2306/51 (CRN 51366) Ordinary Differential Equations Summer 2016**

Instructor: Andrew G. McMorran

Office: D 242

Office Hours: MTWTh 11.00am-12.00pm, or by appointment

Telephone: 470-578-5553

Department Fax: 470-578-9812

E-mail: amcmorra@kennesaw.edu

Class Meetings: MW 8.00am – 10.45am, D 107

(8.00 - 9.20 Lecture, 9.20 – 9.30 Break, 9.30 – 10.45 Lecture)

Prerequisite: A grade of “C” or better in Math 2202 (Calculus II)

**Catalog Course Description: 3-0-3**

An introduction to the theory of ordinary differential equations (ODEs), methods of solving first and higher order linear differential equations and linear systems, some applications in the sciences and engineering, the Laplace transform and its application in solving differential equations and linear systems, stability analysis and Euler’s numerical algorithm.

**Learning Outcomes:**

Upon successfully completing this course students should be able to:

1. Solve special types of first order ordinary differential equations, including separable equations, linear first order equations, Bernoulli’s equation, exact equations, etc.

2. Solve second and higher order homogeneous and nonhomogeneous linear equations and linear systems with constant coefficients by using the methods of undetermined coefficients and variation of parameters, and apply the methods to solve problems in applications.

3. Find Laplace transforms and inverse Laplace transforms and apply these to solve linear differential equations and linear systems.

**Textbook:** “Fundamentals of Differential Equations”, Eighth Edition, by Nagle, Saff, and Snider, Addison-Wesley, ISBN-13: 978-0321747730, ISBN-10: 0321747739

Material covered: Chapters 1, 2, 3, 4, 5, 7

**Calculator:** Where permitted any device may be used. You must be able to calculate derivatives and integrals by hand.

**Assignments:**

There will be three 80 minute in-class tests, and a two-hour final examination.

Test 1 – Monday 13’th, May (8.00am-9.20am)

Test 2 – Wednesday 22’nd, May (8.00am-9.20am)

Test 3 – Monday 11’th, July (8.00am-9.20am)

Final – Monday 25’th, July (9.00am-11.00am)

**Evaluation and Grading:**

Your class grade will be determined solely from the scores on the three class tests, and the final examination. These items will be weighted as follows:

Three in-class tests – 100 points each

Final examination – 100 points

Total – 400 points

A distribution of student scores will be used to determine letter grades.

No make-up or early tests will be administered. In the event that you are unable to take a scheduled test then you must do the following (i) notify the instructor by no later than midnight of the day on which the test is administered of your absence, and (ii) present sufficient verifiable evidence of acceptable, extenuating, and unavoidable circumstances. If you fulfill both of these requirements then the average score that you make over the remaining tests and the final examination will be substituted for the missed test score. In the event that these two requirements are not satisfied a penalty test score will be assigned.

**Weekly Schedule of Topics (Approximate)**

Week 1 – Chapter 1

Week 2 – Chapter 2

Week 3 – Test 1, Chapter 3, Chapter 4

Week 4 – Chapter 4, Test 2

Week 5 – Chapter 4

Week 6 – Chapter 4, Chapter 5

Week 7 – Test 3, Chapter 5, Chapter 7

Week 8 – Chapter 7

Week 9 – Final Exam

**Course Attendance Verification Statement:**

*“Students are solely responsible for managing their enrollment status in a class; nonattendance does not constitute a withdrawal*.”

The last day to withdraw without academic penalty - Monday 27’th, June. For further information on course withdrawals please see: http://catalog.kennesaw.edu/content.php?catoid=24&navoid=2171#withdrawalfromclasses

**Academic Honesty Statement:**

“*Every KSU student is responsible for upholding the provisions of the Student code of Conduct, as published in the Undergraduate and Graduate catalogs. The Student Code of Conduct addresses the University’s policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic malicious/intentional misuses of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Student Conduct and Academic Integrity department, which includes either an “Informal” resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct’s minimum one semester suspension requirement.*”

**Accommodations:**

“*Any student with a documented disability or medical condition needing academic accommodations of class-related activities or schedules must contact the instructor immediately. Written verification from* the KSU Student Disability Services (http://www.kennesaw.edu/stu\_dev/dsss/welcome.html) *is required. No requirements exist that accommodations be made prior to completion of this approved University documentation. All discussions will remain confidential.*”

**Important Dates:**

Classes begin: Wednesday 1'st, June

Last day to withdraw with a grade of W: Monday 27'th, June

Holiday: Monday 4'th, July

Last day of classes: Friday 22'nd, July

Date and time of final exam: Monday 25’th, July (9.00am-11.00am)