Course Title: MATH 355 - 01 – Fall 2018
Introduction to Differential Equations with Applications

Credits: 4

Prerequisite: MATH 221 and either MATH 226 or MATH 228 (with C- or higher)

Course Description: This course is an introduction to the theory of ordinary differential equations. It examines several applications of differential equations to the modeling of physical and other science problems. It describes the analytical methods of solutions to the most fundamental ordinary differential equations, the qualitative methods to analyze solutions of differential equation, and the most basic numerical methods to find approximate solutions. The course also introduces the student to the methods of solutions of initial value problems using the Laplace transform. It is also expected that the students acquire skills using computer software such as Mathematica or Matlab to study differential equations.

Instructor: Nelson Castaneda
Office: Marcus White 123
Phone: 860 832-2851
Email: castanedan@ccsu.edu

Office Hours: Mondays and Wednesdays 7:15 – 9:15 PM, and Fridays 4:00 – 5:00 PM. We can arrange to meet at a different time if necessary.

Textbook: The main option is the WileyPlus package that includes one of the variations of the book Elementary Differential Equations, 10th or later edition by William Boyce and Richard DiPrima, along with several resources such that online assignments and supplemental material. I will assign problems using WileyPlus for practice.

In addition to this I will use Blackboard Learn to provide several resources such as class notes, Mathematica files, and links of interest.

Class Meeting Times: Mondays, Wednesdays, and Fridays 1:40 – 2:50 PM in Social Sciences Hall 204.

Course Requirements: Attend and participate in class regularly; complete homework assignments; take quizzes and tests, as scheduled. A general rule for any college course is that you are expected to put in at least 2 hours of work outside of class for every hour in class.

Coverage: We cover most sections from the chapters on First Order Linear Equations, Second Order Linear Equations, Laplace Transform, and Systems of First Order Linear Equations, as well as a few sections from the chapter on Numerical Methods.

Graphing Calculators: Any graphing calculator is acceptable for homework and class work. However, for tests and quizzes calculators more sophisticated than the TI - 84 are not allowed.

Homework: The class notes will contain several exercises for practice. In addition to this a set of assignments will be posted on WileyPlus. You are encouraged to work with one or more classmates for a more efficient learning. These WileyPlus assignments are not graded. You must ask in class or during office hours questions regarding the problems that you couldn’t solve after honest attempts.

Two special assignments requiring the use of Mathematica or Matlab will be assigned and collected for grade.

Assessment: There will be three quizzes, two in-class tests, two computer projects, and a final exam. Each quiz is worth 5%, the in-class tests are worth 20%, each. Class participation and effort is worth 5%. The two computer projects are worth 10% each. The final exam is cumulative, is given on Wednesday, December 12th, 1:00 - 3:00 PM, and is worth 20%.

Every five missed classes without documented justification will result in a one letter grade reduction for the course.

The minimum averages to determine the letter grades are as follows:
A 93% A- 90% B+ 87% B 83% B- 80% C+ 77% C 73% C- 70% D+ 67% D 63% D- 60%

Final Exam: Wednesday, December 12th, 1:00 - 3:00 PM.
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<th>Assessment</th>
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<th>Topics</th>
<th>Score</th>
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<td>Quiz 1</td>
<td>September 14</td>
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<td>Quiz 2</td>
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<td>Test 1</td>
<td>October 12</td>
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<td>Makeups &amp; Project 1</td>
<td>October 26</td>
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<td>Quiz 3</td>
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<td>Final Exam</td>
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**University Policies:**

1. You must take the final examination at the time specified in the course selection book: Wednesday, December 12th, 1:00 - 3:00 PM.

2. If you are a student with a documented disability, and would like to request academic accommodations, you are encouraged to contact Student Disability Services (SDS) at 860-832-1952, or email disabilityservices@ccsu.edu. Please visit the SDS website to download an Intake form and documentation requirements. Temporary impairments may also qualify for accommodations. Central Connecticut State University provides reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act for students with documented disabilities on an individualized basis.

3. In the event of a weather emergency which requires curtailment or cancellation of classes, listen to WTIC (1080 AM), or check the website Cancellation/Delay Information, or call (860) 832-3333 for the “general snow message.”

4. Students may drop full semester courses up to September 17. Courses dropped by this date will not appear on the students transcript. Please drop the course by September 17 if you think that this course is not appropriate for you. Feel free to stop by my office to discuss your situation.

5. Students withdrawing from a full semester course from September 18 through November 19 (through the 12th week of the semester) may do so by completing a withdrawal form. A notation of W will appear on the students transcript. Withdrawals during this time do not require written authorization; however, it would be prudent for the student to discuss this with their instructor or/and their academic advisor.

6. Cessation of attendance, notice to the instructor, or telephone calls to the Enrollment Center are not considered official notice of a student’s intention to drop the course. After November 19 withdrawals are allowed only for students who are passing the course and only under extenuating circumstances. Such late withdrawals require written approval of the course instructor and the department chair.

7. Central Connecticut State University (CCSU) will not tolerate sexual misconduct against students, staff, faculty, or visitors in any form, including but not limited to: sexual assault, sexual exploitation, sexual harassment or stalking, as defined in CCSU policies. For additional information, please consult the website of the Office of Diversity and Equity.

8. You are responsible for understanding and abiding by the University’s policy on academic integrity. Information on the policy may be found at Academic Integrity Policy. This policy is rigorously enforced by the Department of Mathematical Sciences.

9. All students are expected to demonstrate integrity in the completion of their course work. Academic integrity means doing one’s own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be filed and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

10. For further information on academic misconduct and its consequences, please consult the Student Code of Conduct and the Academic Misconduct Policy.

**Resources Available:**

1. If you need help, take advantage of your instructor’s office hours. Do not wait until just before the first test to do so.

2. The Learning Center is located in Carroll Hall, Room 016. Free tutoring is available. Check this website for schedule and further information.

3. Form a study group with other students in your section. Explaining solutions to homework problems to each other is a good way to learn.

4. A list of private tutors for hire can be found in the website of the math department. The math department is located in Marcus White Room 128, and its phone is 860 - 832 2835.