Syllabus
MATH 355-03: Introduction to Differential Equations with Applications | Spring 2021

CLASS INFORMATION:
Course Number: Math 355 section 03
Class Meeting Time: MW 5:55 - 7:35 pm (online synchronous)
To join the online class meeting you will need to use the link posted on the Blackboard (see Announcements). The link will also be emailed to you before the very first meeting.

INSTRUCTOR INFORMATION:
Name: Dr. Viktoria Savatorova
Office Location: Marcus White 118
Office Phone: 860-832-3679
Email: viktoria.savatorova@ccsu.edu
(please include your name and Math 355 in the subject line)
Office Hours: W 7:45-9:00 pm; F: 10:30-11:45am or by appointment

COURSE DESCRIPTION: qualitative, analytical, and numerical methods for first and second order ordinary differential equations and first order linear systems. Laplace transforms and the application to differential equations. Introduction to numerical methods used to analyze and solve differential equations. Additional topics if time permits.

PREREQUISITES for the COURSE: MATH 221 and either MATH 226 or MATH 228 (C- or higher)
COREQUISITE: MATH 226 or MATH 228 can be taken concurrently.

CREDITS: 4

COURSE MATERIALS:
Notes: I may not necessarily teach from the book. Lecture notes will be posted on the Blackboard.

Blackboard: This course uses the Blackboard online system to provide you with course materials including the syllabus, tentative class schedule, class announcements, studying guides, etc. You will also use Blackboard to submit Tests and some of the Quizzes. Your grades will also be posted there.

Calculators and software: The recommended calculator is one of the following: TI-83, TI-83+, TI-84, TI-84+, TI-86. You may consider using MATLAB (not a requirement). Tests and quizzes may have “do this problem by hand” questions with no calculators or any software allowed.

Computer, camera, and microphone: The class will meet online, you will need to have a strong Internet signal to see and hear what is going on. You will need a camera and a microphone to be able to share your work and present it to the class.

TOPICAL OUTLINE: I will not necessarily teach from the book. However, the material we will cover can be found in Chapters 1, 2, 3, 4, 6 of the book.

LEARNING OUTCOMES: after completion this course students will be able to
- Solve first and second order ordinary differential equations using qualitative, analytical and some numerical methods;
- Solve first order linear systems of differential equations using qualitative and analytical methods;
- Use Laplace transforms to solve the second order initial value problems;
- Use ordinary differential equations to model mechanical and electrical vibrations
EVALUATION AND GRADE ASSIGNMENT:

<table>
<thead>
<tr>
<th>Weight</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Written Homework (not graded but highly recommended)</td>
</tr>
<tr>
<td>12%</td>
<td>In class participation activities (A)</td>
</tr>
<tr>
<td>14%</td>
<td>Written assignments (W)</td>
</tr>
<tr>
<td>20%</td>
<td>Quizzes (Q)</td>
</tr>
<tr>
<td>20%</td>
<td>1st Mid Term Exam (T1)</td>
</tr>
<tr>
<td>24%</td>
<td>2nd Mid Term Exam (T2)</td>
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<td></td>
<td>Cumulative Final Exam (F)</td>
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</tbody>
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HOW TO CALCULATE YOUR SCORE FOR THE COURSE:

\[ \text{TOTAL} = 0.24F + 0.20(T1+T2) + 0.14Q + 0.12W + 0.10A \]

Letter grades will be assigned according to the following scale:

- A 93-100, A- 90-92.9, B+ 87-89.9, B 83-86.9, B- 80-82.9, C+ 77-79.9, C 73-76.9, C- 70-72.9, D+ 67-69.9, D 63-66.9, D- 60-62.9, F below 60.

COURSE SCHEDULE: The (tentative) weekly schedule is posted on the Blackboard

CLASS POLICIES:

ATTENDANCE: Attendance of our online meetings is a mandatory component of this class, and it will be taken regularly. In class participation activities will be offered, and they will influence the grade for the course. Since the class is online, you are encouraged to (1) study before the meeting, (2) bring your questions about the course material and about the homework to the meeting. Do not be afraid to speak in class. Participation will be appreciated even if your idea is not the greatest or your answers are not always correct. Making mistakes is a part of the learning process.

MAKE-UP POLICY: If you miss a class meeting for any reason, you are responsible for all the topics and announcements made in your absence. Make up work will not be accepted and will result in a recorded grade of zero. Missing an examination is a very serious matter. If you know in advance that you will have to miss an examination, you MUST inform your instructor before the examination. In that case, you will normally be offered an alternate time for the examination. If you miss an examination because of an emergency, you need to contact your instructor by the e-mail within 24 hours of the beginning of the examination. Do not wait until the next class meeting to contact your instructor!

HOMEWORK:

Written homework is assigned for all topics covered in class. This assignment consists of selected problems posted on the Blackboard (see the Homework folder in the Course content). The written homework will not be collected or graded. Nevertheless, I suggest you solve these problems during the semester regularly and especially for mastery of the material before exams and quizzes. If you will have questions on homework, please bring them to the class meetings. You are also encouraged to post your questions on the discussion board on the Blackboard to get help from your classmates or from me. Solutions for selected homework questions will be posted on the Blackboard.

QUIZZES will be given on weeks without an exam. They will cover the material from recent homework assignments. The majority of quizzes will be given during the class time, some of them may be “take home” (it will be announced).

WRITTEN ASSIGNMENTS will consist of not more than 1-3 questions and be assigned to solve outside of the class. Usually you will be given 2-3 days to complete the assignment and submit it to the Blackboard. You will be warned in advance about each assignment and its due date.

TESTING:

TEST 1: Wednesday, March, 3rd
TEST 2: Monday, April, 19th
Final EXAM: Wednesday, May, 12th (5:30-7:30 pm)
On the test day, you will need to join the online meeting as you would do for the regular class and turn your camera ON. The test will be posted on the Blackboard. You will be given 75 min (class time) to complete the test and upload your work. During the test you may not take breaks, communicate with other people, search Internet, etc. Detailed instructions will be provided before each test and also posted on the Blackboard.

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

GUIDELINES FOR COURTESY AND RESPECT:

I would like to welcome all students into an environment that creates a sense of community pride, courtesy, and respect; we are here to work cooperatively and to learn together. In order to create a smooth and harmonious learning community, please make every attempt to come to all the class sessions, join each meeting on time, and to stay until the end of the meeting. It is important that we are all able to stay focused on the class lecture/discussion. For this reason, only one student at a time should be speaking in the class. In the same time, everyone is encouraged to post messages in the chat. When I speak, you can interrupt me at any time if you have a question.

Thank you in advance for your cooperation.

SOME PIECES OF ADVICE FOR SUCCESS AND MY EXPECTATIONS OF YOU:

1. Be in class on time, take notes and participate actively.
2. Read the posted class notes and the textbook. Sounds obvious, but I do recommend browsing the section to be covered the night before the class, trying to identify the important points and objectives. Then after class (the same day), look through the covered topics carefully and review/rewrite your class notes.
3. Keep a separate homework notebook.
4. Every hour in class should be accompanied by two hours or so of work outside of class. Some students will require more or less time at various points of the semester.
5. This class will be taught online, so, communication is a key. Stay connected with your instructor and your classmates.
6. Check your university email daily. Login into the Blackboard daily to see new announcements, uploaded course materials, new posts on the discussion board, your grades, etc. Your emails will be answered promptly: you are encouraged to reach out to me with all your questions and concerns. Be proactive!

UNIVERSITY POLICIES:

1. You must take the final examination at the time specified by CCSU’s final exam schedule: Wednesday, May, 12 (5:30 – 7:30 pm)
2. In the event of a weather emergency which requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333 for the “general snow message.”
3. Course Accommodations Policy
   Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Student Disability Services at (860)-832-1952 if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assist you in coordinating reasonable accommodations with your professors.
4. You are responsible for understanding and abiding by the University’s policy on academic integrity. Information on the policy may be found at http://www.ccsu.edu/AcademicIntegrity/. This policy is rigorously enforced by the Department of Mathematical Sciences.

5. The last day to drop this course without approval is April 19. Before this date, approvals for withdrawal are not required; however, it is strongly recommended that students consult with their academic advisors prior to deciding to withdraw. 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 April 19, withdrawals are allowed only under extenuating circumstances and require approval of the course instructor and of the Chair of the Department of Mathematical Sciences.

6. **Statement on Discrimination and Harassment**
   Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about should contact the Office of Equity & Inclusion (OEI) at 860-832-1652, Student Affairs at 860-832-1601, or their faculty member. The OEI is located on the main floor of Davidson Hall, room 119.

7. **Sexual Misconduct, Intimate Partner Violence and Stalking**
   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 CCSU policy at [https://www.ccsu.edu/diversity/policies/index.html](https://www.ccsu.edu/diversity/policies/index.html).
   All faculty members and staff have a duty to report incidents of sexual harassment including sexual misconduct, intimate partner violence and stalking to Pamela Whitley, Title IX Officer, Office of Equity & Inclusion, Davidson Hall, 119. To file a report, contact: Equity & Inclusion (860-832-1652), Student Conduct (860-832-1667) or Student Affairs (860-832-1601). For criminal complaints, contact the University Police (860-832-2375).
   For support and advocacy, contact: Office of Victim Advocacy at 860-832-3795 or jflanagan@ccsu.edu; Student Wellness Services at 860-832-1945 (confidential); Women’s Center at 860-832-1655; the local YWCA’s Sexual Assault Crisis Services Hotline at 860-223-1787 (confidential) and Prudence Crandall Center for Domestic Violence (confidential) at 888-774-2900 (24-hour hotline).

GOOD LUCK IN YOUR STUDIES!