MATH 355 - Introduction to Differential Equations with Applications

Department of Mathematical Sciences Fall 2021

READ THIS SYLLABUS CAREFULLY. YOU ARE RESPONSIBLE FOR KNOWING THIS INFORMATION!

Prerequisite: MATH 221 and either MATH 226 or MATH 228 (C- or higher). MATH 226 or MATH 228 can be taken concurrently.

Course Description: Introduction to analytical, geometric, and numerical methods for solving ordinary differential equations. Basic models of physical systems using ordinary differential equations. Introduction to software used for solving ordinary differential equations. Laplace transforms.

Textbook: Notes on Diffy Qs: Differential Equations for Engineers by Jiří Lebl

https://www.jirka.org/diffyqs/

and

Differential Equations by Charles Bergeron, Jiri Lebl, and other open-source creators

http://www.differentialequations.net

Instructor: Dr. Eran Makover

Phones: Office: (860) 832-2941

Email: makovere@ccsu.edu best way to reach me

Office: Marcus White 101

Office Hours: MWF 9:30-10:50 and M 2:50-3:50

Class Meeting Times: MWF 10:50-12:00 DiLoreto D205

Coverage: We will cover chapters 1,2,6,3 and additional section as time permits.
We will be using Edfinity:
The homework are on the homework section in blackboard
You will have to buy access to Edfinity site the coast is $25 on the site
You can find instructions at:

In addition we will have some computer projects most likely using Matlab.

You can find information how you can install Matlab on your personal computer:
https://www.ccsu.edu/it/files/Math_Stats_docs/Installing%20Matlab%20on%20Personal%20PCs.pdf

or go to

and create account using your CCSU email

Course Requirements:
Attend and participate in class regularly, complete assignments, and take quizzes and tests as scheduled. Quizzes and homework cannot be made up. No Make-Up Exam will be given unless there exists an extenuating circumstance and prior consent is given. In the case of an extenuating circumstance, the missed test must be made up prior to the next class meeting.

Homework cannot be made up. No Make-Up Exam will be given unless there exists an extenuating circumstance and prior consent is given. In the case of an extenuating circumstance, the missed test must be made up prior to the next class meeting.

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.

You will need a calculator for this course.

**Homework: Doing homework is the most important part of your course work.** After each class you will find the homework at Edfinity course website. You are expected to do all homework assign before the next class, although homework will not be collected you need to write down you work. The online homework is to help you track you progress, remember that on the tests you will be required to justify you answers therefore write a complete justification for every problem don’t just guess the correct choice.

Tentative date for the first test **October 1**

**Final Exam:** December 8 10:30-12:30

Attendance and Class Participation Policy:
a. You are expected to attend every class. If you can’t attend class, you need to contact one of your classmates to find out what you have missed and get the notes.

b. In the case of an unavoidable absence, please notify me in advance of the date, or, if that is impossible, phone or e-mail me at the time of the absence.

c. You are expected to participate in every class. Class participation consists of asking questions, responding to questions in class or participating in group activities.

University Policies:

1. You must take the final examination on December 8, 10:30-12:30

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 at http://www.ccsu.edu/SDS/ 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. The last day to withdraw from a course is November 17. Approvals for withdrawal are not required; however, it is strongly recommended that students consult with their academic advisors prior to deciding to withdraw. Cessations 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 17 withdrawals are allowed only under extenuating circumstances and require approval of the course instructor, department chair.

Poor academic performance is not considered an extenuating circumstance.

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 for 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.

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. 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 for 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; 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).

**Academic Integrity:** All students are expected to demonstrate integrity in the completion of their coursework. 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.

For further information on academic misconduct and its consequences, please consult the Student Code of Conduct (http://www.ccsu.edu/StudentConduct/codeofconduct.asp) and the Academic Misconduct Policy (http://www.ccsu.edu/AcademicIntegrity/).

**Evaluation**

The average for the course will be based on the following weights:

- **Three exams** (highest exam score weighted 30%, second highest weighted 20%, lowest score weighted 10%)  
  60%

- **Homework and computer projects**  
  20%
Final Examination 20%

Total 100%

Three exams: the three exams count 60%, but are weighted in your favor according to the following scheme: your highest score is weighted 30%, second highest weighted 20%, lowest score weighted 10%.

Note: In order to receive the grade of C- or better for the course, you must receive the grade of at least 60% on the final exam.

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The single most valuable piece of advice in this whole syllabus (really):

It is virtually impossible to pass this course without doing the homework! (No kidding!) This is not a threat, but simply a reality of math courses. Just watching me work problems in class is not sufficient. It would be like taking a course in swimming without ever getting in the water. The only way you learn this stuff is with lots of practice (the same was true for me, too). That means you need to do all the homework religiously.

A Useful Diagnostic: If you work the problems using the solutions in the back of the book or a tutor, be careful not to fool yourself. Until you can do a problem without constant help from the tutor or without constantly looking at the solution, then you do not really understand how to do the problem. Remember that the solution or the tutor will not be there to help you on an exam. That doesn’t mean don’t use them – it simply means don’t use them as a crutch.