MATH 3341-06 (DIFFERENTIAL EQUATIONS)

Syllabus for FALL 2019

**Classroom**: MAGC 2.210, **Time:** T & R 5:00pm – 6:15pm

**Instructor:** Dr. Zhijun (George) Qiao

Office: MAGC 3.722, Phone: 665-3406 (W), Email: [zhijun.qiao@utrgv.edu](mailto:zhijun.qiao@utrgv.edu)

Webpage: <http://faculty.utrgv.edu/zhijun.qiao> (**Online notes are available** at Dr. Qiao’s website)

**Office hours**: TR 11:00am-12:00pm or by appointment.

**Textbook:** *A First Course in Differential Equations, 10th edition* by Dennis G. Zill, Brooks Cole Publisher; ISBN: 0534418783. eBook version (PDF) $19.99, and used hard copy ~$5.00. Lecture Notes will be available online.

**Prerequisite:** MATH 2414 (Calculus II) with a grade of C or better.

**Material:** The material to be covered in this course is mostly in the chapters 1–8 of the text. The contents include: First-order Differential Equations, Linear Second-order and Higher-order Differential Equations, Laplace Transform, Series and Numerical Solutions of Differential Equations.

**Calculator:** A calculator capable of performing basic graphing and numerical integration (a TI-86 or equivalent, Maple, Matlab) is strongly recommended.

**Daily supplies:**  You need to bring Textbook, Notebook, Loose leaf paper, Graph paper, Pen, Pencil etc to the class.

**Student Learning Outcomes:** After completing this course students will

1. Understand what differential equations are, how they arise, why they are useful, and what they can tell us about the situations they model.
2. Be able to use correct differential equations terminology, such as the terms linear, nonlinear, order, explicit solution, implicit solution, ordinary differential equation, partial differential equation, existence of solutions, uniqueness of solutions, etc.
3. Be able to solve first order differential equations by the standard methods of separation of variables, integrating factors, exact methods, substitutions, and transformations or show that solutions do not exist.
4. Be able to solve certain types of linear differential equations of order greater than one.
5. Be able to model applied problems in terms of differential equations and use the equations to obtain useful information about the problems.
6. Be able to use Laplace transform and series solution methods to obtain solutions and other useful information about the differential equations to which these methods apply.
7. Be able to use technology to solve differential equations or to obtain other useful information about the problems that they model.

**Intended Student Learning Outcomes:** Students completing the B.S. program in Mathematics will

1. Demonstrate in-depth knowledge of Mathematics, its scope, application, history, problems, methods, and usefulness to mankind both as a science and as an intellectual discipline.
2. Demonstrate a sound conceptual understanding of Mathematics through the construction of mathematically rigorous and logically correct proofs.
3. Identify, formulate, and analyze real world problems with statistical or mathematical techniques.
4. Utilize technology as an effective tool in investigating, understanding, and applying mathematics.
5. Communicate mathematics effectively to mathematical and non-mathematical audiences in oral, written, and multi–media form.
6. Demonstrate an appreciation of and enthusiasm for lifelong scientific inquiry, learning, and creativity.

**General Grade Policy**

**Quizzes and Homework –** Homework assignment is assigned daily through the Webwork, and will consist of problems from the textbook and occasional handout. Quizzes and Tests are based on the homework problems. A quiz will be taken every two weeks. It is strongly recommended that students work all those homework problems since quiz and test score are used to determine your grade. Completing the assignments is the ***single most important part*** of this course. You will be expected to spend, on average, about 4 hours each week to complete the assignments. The assigned problems will be graded automatically through webwork system. They will form the basis for quizzes and the mid-term and final exams. No late re-quiz will be accepted.

**Tests –** there will be three one-hour in-class tests. All tests must be taken during their scheduled times. The test time will be announced in advance (basically, a test will be given monthly), and a short review will be given before each test. All students must show their work on the tests. Score will be provided to you separately. No retest opportunities.

**Final Exam –** The comprehensive final exam is tentatively scheduled on December 10 (Tuesday), 2019, 5:45pm – 7:30pm. All students must take the final exam at the scheduled time. A summary review will be given in the class before the final exam.

**Grading –** The course grade will be based on

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| Best 10 of the HW/Quiz at 10 pts each | 100 pts |
| Test 1 | 100 pts |
| Test 2 | 100 pts |
| Test 3 | 100 pts |
| Comprehensive Final Exam | 100 pts |
| Total | 500 pts |

The course grade will be assigned according to a scale no higher than A(90-100%), B(80-89%), C(70-79%), D(60-69%), F(below 60%).

**THERE WILL BE NO MAKE-UP QUIZZES OR EXAMS GIVEN**.

If a student is absent during a scheduled major test and quiz, the student must go by the instructor’s office during the scheduled office hours to discuss the validity of the excuse.  In the case of a valid excuse, the missed test grade will be replaced by the final exam grade.    If a student does not have a valid excuse, the grade for the missed test is a zero and cannot be replaced.  If you arrive late to a test you will not be given additional time to complete the exam.  Anyone arriving to a test after somebody else who took the exam has left will not be allowed to take the exam. Students missing more than one exam may be dropped from the course. With an unexcused absence, a score of 0 will be recorded for the missed HW/Quiz or exam.

**Tutoring:** There are several tutoring places available on campus. Math Lab I, II (MAGC 1.106, MAGC 1.308) .and the Math Learning Center in the LEAC Building room 114.

***Classroom Behavior:***

* All beepers and cellular phones must be turned off before you enter the classroom.
* Once in class, a student is expected to remain in class for the duration of the class.  If a student needs to leave class early, than the student needs to discuss the situation with the instructor before class begins.
* During class students are expected to be courteous to the instructor and other classmates. Examples of discourteous behavior are unnecessary talking, sleeping, tardiness, leaving class while instructor is lecturing, sharpening pencils during the lecture, etc.
* No Food Allowed In Classroom.
* Chronic tardiness and discourteous behavior will not be tolerated and is cause for a student's dismissal from class for the remainder of the semester.

**Calendar of Activities**

Aug. 26 (Mon.) Fall classes begin

Aug. 29 (Thurs.) Last day to add a class or register for Fall classes

Aug. 30 (Fri.) Last day to withdraw (drop all classes) and receive an 80% refund

Sep. 2 (Mon.) Labor Day Holiday. No classes.

Sep. 9 (Mon.) Last day to withdraw (drop all classes) and receive a 70% refund

Sep. 11 (Wed.) Census Day (last day to drop without it appearing on the transcript)

Sep. 16 (Mon.) Last day to withdraw (drop all classes) and receive a 50% refund

Sep. 23 (Mon.) Last day to withdraw (drop all classes) and receive a 25% refund

Nov. 13 (Wed.) Last day to drop a class (grade of DR) or withdraw (grade of W)

Nov. 28-29 (Thurs.-Fri.) Thanksgiving Holiday. No classes.

Dec. 5 (Thurs.) Study Day. No classes.

Dec. 6-12 (Fri.-Thurs.) Final Exams

**UTRGV Policy Statements**

**STUDENTS WITH DISABILITIES:**

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact **Student Accessibility Services (SAS)** as soon as possible to schedule an appointment to initiate services.  Accommodations can be arranged through SAS at any time, but are not retroactive.  Students who experience a broken bone, severe injury, or undergo surgery during the semester are eligible for temporary services.

**Pregnancy, Pregnancy-related, and Parenting Accommodations**

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

**Student Accessibility Services:**

**Brownsville Campus**: Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

**Edinburg Campus:** Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

**MANDATORY COURSE EVALUATION PERIOD:**

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Module 1 October 2nd – 8th

Module 2 November 27th – December 3rd

Full Fall Semester November 14th – December 4th

**ATTENDANCE:**

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**SCHOLASTIC DISHONESTY:**

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to Student Rights and Responsibilities.

**SEXUAL MISCONDUCT and MANDATORY REPORTING:**

In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity ([oie@utrgv.edu](mailto:oie@utrgv.edu)) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at [www.utrgv.edu/equity](https://nam01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.utrgv.edu%2Fequity&data=02%7C01%7Cmarissa.alaniz%40utrgv.edu%7Ccdba6e51db19402b2a0f08d7062784d4%7C990436a687df491c91249afa91f88827%7C0%7C0%7C636984639122459545&sdata=5hndVru5iLHMQARX2XhtCu41F8pbn0A6sKxkK1lXYss%3D&reserved=0), including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at 665-8287, 882-8282, or [OVAVP@utrgv.edu](mailto:OVAVP@utrgv.edu).

**COURSE DROPS:**

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**STUDENT SERVICES:**

Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email ([ucentral@utrgv.edu](mailto:ucentral@utrgv.edu)) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:

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| **Center Name** | **Brownsville Campus** | **Edinburg Campus** |
| **Advising Center**  [AcademicAdvising@utrgv.edu](mailto:AcademicAdvising@utrgv.edu) | BMAIN 1.400  (956) 665-7120 | ESWKH 101  (956) 665-7120 |
| **Career Center**  [CareerCenter@utrgv.edu](mailto:CareerCenter@utrgv.edu) | BCRTZ 129  (956) 882-5627 | ESSBL 2.101  (956) 665-2243 |
| **Counseling Center**  [Counseling@utrgv.edu](mailto:Counseling@utrgv.edu) | EUCTR 109  (956) 665-2574 | BSTUN 2.10  (956) 882-3897 |
| **Learning Center**  [LearningCenter@utrgv.edu](mailto:LearningCenter@utrgv.edu) | BMSLC 2.118  (956) 882-8208 | ELCTR 100  (956) 665-2585 |
| **Writing Center**  [WC@utrgv.edu](mailto:WC@utrgv.edu) | BUBLB 3.206  (956) 882-7065 | ESTAC 3.119  (956) 665-2538 |

**Math 3341 - 03 Homework Assignments**

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