

## **MATH 3305.002 – Ordinary Differential Equations**

### **Instructor Contact Information:**

Name: Regan Beckham  
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Office: RBN 4012  
Meeting Time: TR 12:30PM

**Office Hours:** TBA

**Required Text:** *Introduction to Ordinary Differential Equations* by Shepley L. Ross

### **Prerequisites**

You may enroll in MATH 3305 if you have successfully completed MATH 2414.

### **Catalog Description of Course**

Study of ordinary differential equations. Emphasis is given to equations of the first order, linear equations, and solution by series.

### **In-Class Exams (60%)**

There will be three, maybe four, in-class exams throughout the semester. Exams will be announced at least one week prior.

### **Quizzes and Homework (10%)**

There will be a collections of homework assignments and in-class quizzes throughout the semester. Quizzes and homework due dates will be announced in class. No make-up quizzes will be given.

### **Final Exam (30%)**

There will be a comprehensive final exam. The date for the final exam will be announced at a later date. **No early final will be given.**

### **Make-up Policy**

Make-ups for documented absences that are required as part of a UT Tyler obligation (e.g. athletes participating in an event, participating in a debate contest, etc.) or for religious observation will be granted. For all make-ups of this type, prior notification of at least one week and documentation are required.

### **Cell Phone Policy**

Before class begins, you must turn your cell phone/PDA/pager/gizmo off or put it on silent mode. NOT VIBRATE - SILENT OR OFF! Cell phones cause a distraction to other students and disrupt the class.

### **Blackboard**

I will use Blackboard to contact you, post assignments and grades.

### **Classroom Policy**

If you know you will be late for class or have to leave early, notify me ahead of time. Entering late and leaving early should be done quietly, quickly, and rarely.

## Learning Outcomes

On successful completion of this course, students should be able to:

- 1) Recognize and solve ordinary differential equations and systems of equations using the techniques of:
  - Direct integration
  - Separating the variables
  - Identifying homogeneous, exact and linear equations
  - Reduction of order
  - Homogeneous equations with constant coefficients
  - Methods of undetermined coefficients and variation of parameters
  - Series solutions
  - Operator methods for finding particular solutions
  - Laplace transforms methods
- 2) Find particular solution to differential equations giving boundary conditions or initial conditions
- 3) Analyze real world problems from Biology, Chemistry, Economics, Engineering, and Physics, including problems related to predator versus prey, mixtures, growth and decay, heating and cooling, electronic circuits and Newtonian mechanics.

## Mathematics Learning Center (MLC)

The Department of Mathematics provides a free tutoring service for UT Tyler students taking lower level mathematics courses (Intermediate Algebra through Calculus II) in the Mathematics Learning Center located in RBN 4021. The MLC is generally open 8am-10pm Monday through Thursday and 8am-5pm on Fridays. During these hours students have access to free tutoring, access to computers for online homework and Mathematica labs, and have a place to work on homework. Upon entering the MLC students are asked for their student ID which will be scanned for attendance and held until the student wishes to be scanned out before leaving the lab. The MLC is a place to do work related to your mathematics courses - it is not a general access lab used for surfing the internet and checking email (this will be monitored by the tutors). As such, you should expect the tutors to help you with your homework. However, this doesn't mean that they remember how to do all of the different types of problems. Sometimes it will be necessary for the tutor to ask for your book to review some material before helping you. If a tutor cannot figure something out, then they will consult with a faculty member. Occasionally things go wrong in the MLC and we need to hear about it. If you feel that you are not getting the help that you need (tutors ignoring your requests for help or refusing to help due to ignorance of a subject) or if the environment is too distracting (loud talking, someone playing music, etc), then go to your instructor or Joshua Jones (RBN 4004) to report your problem. It is especially important to remember the day and time that the incident occurred. All complaints will be kept anonymous.

## **University Policies**

### **Students Rights and Responsibilities**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:

<http://www.uttyler.edu/wellness/StudentRightsandResponsibilities.html>

### **Grade Replacement/Forgiveness**

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average.

Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

### **State-Mandated Course Drop Policy**

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the 12th day of class (See Schedule of Classes for the specific date). Exceptions to the 6-drop rule include, but are not limited to, the following: totally withdrawing from the university; being administratively dropped from a course; dropping a course for a personal emergency; dropping a course for documented change of work schedule; or dropping a course for active duty service with the U.S. armed forces or Texas National Guard.

Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

### **Disability Services**

In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact Ida MacDonald in the Disability Support Services office in UC 282, or call (903) 566-7079.

### **Student Absence due to Religious Observance**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

### **Student Absence for University-Sponsored Events and Activities**

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

### **Social Security and FERPA Statement:**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.