

# MATH 3303, ODE, Fall 2018

**Section:** 01      **Hours Credit:** 3 hours

**Room and Hours:** Anthropology Building 7, MWF: 9:55 am – 10:45 am

**Prerequisite:** MATH 2644 with C or better

**Instructor:** Dr. Kwang Shin

**Office Hours:** MWF (10:50 am --11:50 am, and 2:30 pm – 3:25 pm) or by appointment.

**Office:** 311 Boyd      **Phone:** 678-839-4138

**E-mail:** [kshin@westga.edu](mailto:kshin@westga.edu) through your campus e-mail (myUWG).

**Course Webpage:** <http://www.westga.edu/~kshin/3303/>

**Course Description:** This course is an introduction to the subject of differential equations and has three components:

1. Existence theory and classical methods for first order equations (Chapters 1&2)
2. Real life applications and the theory of linear equations (Chapters 3&4)
3. Techniques and methods for solving general linear equations: operator method, power series, and an introduction to the Laplace transform (Chapters 6&7).

If time permits, we will discuss some other topics.

**Required Text:** Differential Equations with Boundary-Value Problems, 8th Edition, by Dennis G. Zill and Warren S. Wright, Brooks-Cole Publishing Company.

**Learning Outcomes:** the student will be able:

1. To identify and classify a differential equation
2. To solve first order equations by using separation of variables and integrating factors
3. To solve initial value problems
4. To solve a constant coefficient homogeneous equation by using the characteristics equation
5. To solve a nonhomogeneous equation by using undetermined coefficients or variation of parameters
6. To find power series solutions of linear equations with analytic coefficients
7. To solve systems of linear equations by methods of linear algebra
8. To solve a linear differential equation by the Laplace Transform
9. To use computer resources to solve ordinary differential equations symbolically

**Hour Exams:** Exam 1 (Mon, Sep 17), Exam 2 (Wed, Oct 24), Exam 3 (Mon, Dec 3).

**Final Exam:** Wednesday, December 12, 8:00 am -- 10:00 am. The final exam will be cumulative.

**Homework:** Homework will be assigned every day and posted at the course website. Homework will be collected at the beginning of the next class for grade. Doing homework in timely fashion is essential for the success in this course. Partial credit will be considered for incomplete work. However, **late submission will receive zero point.** The total homework score will be converted to a 70 point scale at the end of semester.

**Quizzes:** There will be a quiz on almost every Friday consisting of problems that are *almost identical* to homework problems. If we need to take a quiz on a different day of a week, it will be announced in advance in class. Each quiz will be 10 points and two lowest scores will be dropped. If needed, the total quiz score will be converted to an 80 point scale at the end of semester.

<b>Grade Scale:</b>	3 hour exams	300 points (100 points each)
	Quizzes	80 points
	Homework	70 points
	Final	200 points
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	Total	650 points

A: 585 - 650, B: 520 - 584, C: 455 - 519, D: 357 - 454, F: 0 - 356

**October 8** is the last day to withdraw from a class with a grade of W.

**Attendance and Pop-up Quizzes:** Attendance is required and expected. Students are responsible for all material covered in class and all announcements made. An undetermined number of pop-up quizzes may be given for extra points. Such a quiz will consist of one problem, discussed during the same class. *It will count as absent if you are not present when the attendance is checked. Attendance can be used for bonus points at the end.* If you have no absence, you will get 10 bonus points and for each absence, you will get 5 points less. For example, if you miss 3 classes in total, you will get 10 minus 15, resulting -5 points and if you miss 5 classes, you will get -15 points. These absences exclude absences due to official university activities if approved by the instructor in advance or well-documented illness.

**Make-up:** There will be no make-up quiz. In general, make-up exams will *not* be given *after* the scheduled exam date. There will be no make-up final except when a conflict with other finals occurs. If a conflict occurs to you, please inform the instructor at least two weeks in advance. Make-up hour exams will be granted for official university activities if the student notifies the instructor at least a week in advance and for well-documented illness.

**Classroom Behavior:** You are expected not to disturb your classmate's learning. No phone or computer use during class without instructor's permission.

Also, please carefully review the following information at <https://www.westga.edu/UWGSyllabusPolicies/> or <https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>. It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.