Math 2320 Differential Equations

I. PROFESSOR CONTACT INFORMATION:

Professor:	Dr. Vinh Dang	**Office Phone:**	281-618-5684
Office:	WINSHIP 115 T	**Office Hours**	MTWTh: 11:45-12:45pm (in Win 177)
E-mail:	vinh.x.dang@lonestar.edu		

II. WELCOME TO:

Term and Year:	Summer 2019
Course Title:	MATH 2320
Course Subject:	Differential Equations
Course Sections:	1703
Class Days & Times:	MTWTh: **9:45-11:45am**
Class Room Locations:	Winship 177
Credit Hours:	**3**

COURSE OVERVIEW:

Linear equations, solutions in series, solutions using Laplace transforms, systems of differential equations and applications to problems in engineering and allied fields.

The Student Will: **1**. Identify homogeneous equations, homogeneous equations with constant coefficients, and exact and linear differential equations. **2**. Solve ordinary differential equations and systems of equations using: a) Direct integration b) Separation of variables c) Reduction of order d) Methods of undetermined coefficients and variation of parameters e) Series solutions f) Operator methods for finding particular solutions g) Laplace transform methods. **3**. Determine particular solutions

to differential equations with given boundary conditions or initial conditions. **4**. Analyze real-world problems .

III. GETTING READY:

Prerequisites: Calculus II (Math 2414).
Engl 0305 or 0365 or higher level course or placement by testing
Corequisite: Engl 0307 (if not college-level in English)

Textbook (Recommended): Differential Equations with Boundary-Value Problems by Zill (and Cullen)

Course Websites:
http://apps.lonestar.edu/blogs/vindang/summer-2019/math-2320-section-1703-differential-equations/
This is the most important website for this course. You can find plenty of resources on the course website that can help you succeed. (Syllabus, calendar, lecture notes, worksheets,, exam reviews, etc.)
https://d2l.lonestar.edu/
(this is for the purpose of recording your grades only)

IV. INSTRUCTOR GUIDELINES AND POLICIES:

FINAL GRADE CALCULATION:

Homework	15%
3 Exams	75% (3 exams @ 25% each)
Term Paper	10%

GRADING POLICY:
90 – 100: A; 80–89.$\overline{9}$: B; 70 –79.$\overline{9}$: C; 60 – 69.$\overline{9}$: D; 59.$\overline{9}$ or Below: F.

ATTENDANCE POLICY:

- Your attendance is critical. I cannot help you if you are not present.
- **Attendance is taken daily. I reserve the right to drop you after 3 or more absences.**
- You are expected to attend all classes and be on time. If you are more than 15 minutes late or if you leave in the middle of my lecture, it is counted as an absence. Arriving late to class or leaving the classroom in the middle of lecture is disrespectful and disruptive to your classmates and professor. Unless prior arrangement is made with me, I might drop students who arrive late or leave early three or more times.

HOMEWORK:

- **There will be no extensions or make-up to any of the homework assignments under any circumstances**.
- There are 3 homework sets. The first homework set consists of all the assignments that correspond to the sections that Test 1 covers. It is due at the beginning of class on the day of Test 1. The second homework set consists of all the assignments that correspond to the sections that Test 2 covers, etc.

- Each assignment in a homework set is graded out of 5 points. **1 point**: serious attempt on at least half of the problems. **2 points**: serious attempt on most problems (80%) but some solutions may not contain sufficient work or explanation or incorrect. **3 points**: serious attempt on **all** problems but some solutions may not contain sufficient work or explanation or incorrect. **4 points**: do **all** problems, solutions contain sufficient work and explanations for most problems (80%), but have some minor errors in a few problems. **5 points**: do all problems with detailed and correct solutions and explanations to all problems.
- The only way to learn mathematics is to DO mathematics. The homework is designed to help you understand the essential material and develop your problem solving skills. Therefore, the key to keep up with the fast pace of the course and do well in exams is to constantly practice solving homework problems and understand all the steps, concepts, definitions and results involved in their solutions.
- I strongly encourage you to work in groups and collaborate on the homework assignments. However, do not simply copy the answers from your classmates, make sure you understand every step of the solutions and all the concepts involved in a problem.

Term Paper:

Each student will select two application problems from a list of approved problems and write a term paper on the application problems. The term paper must be typed with proper mathematical formulas and notations. For the term paper to be marked as satisfactory, it must include:

- Background information about the selected problems: what is the context of the problem? Explain the background topics of the problems. Explain the significance of the topics and the applications. Define new terminologies and notations.
- Complete solution to the problems: Explain the methods of this course that you apply to solve the problems. Provide complete and detailed solutions to the problems using these methods. Justify all the steps of your solutions.
- Further explorations: what are the assumptions of the models used? What are some possible extensions of the models? What are some other applications of the models? What are some possible research questions that arise from your analysis of these application problems?
- Use at least two outside sources for your paper (the course textbook does not count toward this). Cite all the outside sources appropriately.
- Any help or collaboration must be given credit and cited.
- The term paper is due in-class on Wednesday, August 14th. No late paper will be accepted.

REGULAR EXAMS/FINAL EXAM MAKE-UP POLICY:

- You will have 2 exams and a final. All exams are paper-and-pencil. You must show all work on the exam.

- All cellphones must be turned off and put on the table, clearly visible to the instructor. All other material must be put in your. Having a cellphone on you during any of the exams immediately results in a zero for that exam.

- No make-up exams will be given.

USE OF PERSONAL ELECTRONIC EQUIPMENT IN CLASS:

- Unless otherwise given permission by your instructor, all cell phones and laptop computers must be turned off and placed out of sight. Personal electronic devices of any kind are not allowed during lecture.
- Text messaging is not allowed in the classroom, you will be asked to leave the classroom if you engage in text messaging.
- During regular exams and the final, you must turn off all your cell phones, laptops, PDA's, ipads, etc. **If you have an electronic communication device with you during the exam, you will receive a zero on the exam regardless of whether you use it or not. This is absolutely non-negotiable.**

BEHAVIOR:

I have zero tolerance for inappropriate and/or disrespectful behaviors, language and/or profanity in class, during my office hours or in email-communication. Students who engage in such behaviors will be removed from the class room or dropped from the class, depending on the circumstances. I will also remove any individual from the lectures/ discussions and/or the course who is deemed by me and/or others to be disrupting the educational process. In serious circumstances, students might be referred to the appropriate LSC offices which could result in disciplinary actions or dismissal from the college. This is a fast-paced course and there are a lot of material to cover. Hence, the class is primarily lecture-oriented and I will spend most of class time to lecture on the important concepts, important problem solving techniques and examples. If you have homework questions, policy questions, questions on previous material, or questions on the prerequisite material for this class, come to my office during my office hours and I will be happy to answer them. On the other hand, I welcome and encourage you to answer the questions and exercises that I pose during my lecture.

RESOURCES:

Math Lab Tutoring: Students can get free help from tutors in MAC center (Winship 110). No appointment is necessary and the Lab is staffed with a tutor or tutors during all the hours it is open. Rhonda Cannon, Counselor for Math and Natural Sciences, is available in Winship 115G to assist you in meeting your academic, career, and personal goals.

CAMPUS CARRY:

The Texas Legislature enacted campus carry by passing Senate Bill 11, effective at LSC on August 1, 2017. Senate Bill 11, known as the "Campus Carry" law, amends Texas law to allow license holders to carry concealed handguns on college campuses. To carry a concealed handgun on LSC campuses, an individual must have a valid License to Carry issued by the Texas Department of Public Safety. LSC has established rules and regulations regarding enforcement of Campus Carry. Lone Star College prohibits concealed carry in some areas of LSC campuses. For more information about Campus Carry, visit the LSC Campus Carry website at http://www.lonestar.edu/campuscarry.

ADA STATEMENT (2017)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides civil rights protection for persons with disabilities. If you have a disability that requires accommodation(s) to participate in this course, please contact the LSC-North Harris Disability Services Office as soon as possible (Winship 120, 281-765-7940). Disability Services will provide you with the documentation I

need in order to provide your accommodation(s). Failure to handle this in a timely manner may delay your accommodations.

6 – DROP STATEMENT

Students who enrolled in Texas public institutions of higher education as first-time college students during the Fall 2007 term or later are subject to section 51.907 of the Texas Education Code, which states that an institution of higher education may not permit a student to drop (withdraw with a grade of "W") from more than six courses. This six-course limit includes courses that a transfer student has previously dropped at other Texas public institutions of higher education if they fall under the law.

EMERGENCY NOTIFICATION INFORMATION

Lone Star College System (LSCS) is committed to maintaining the safety of the students, faculty, staff, and guests while visiting any of our campuses. Seehttp://www.lonestar.edu/oem for details. Register at http://www.lonestar.edu/12803.htm to receive emergency notifications. In the event of an emergency contact LSCS Police at (281) 290-5911 or X5911.