

Spring 2007
MATH 315-01: Differential Equations and Linear Algebra

T, Th 9:25am-10:40pm, 223 College Hall
W 11:00-11:50am, 101 Bayer Hall

Instructor: Dr. Stacey Levine

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Office: 405 College Hall

Office phone: 412-396-5489

Office hours: T,Th 10:45-12:00 pm or by appt

Text: *Linear Algebra and Differential Equations*, by Peterson and Sochacki

Prerequisites: You must have passed Math 116 (Calculus II) prior to enrolling.

Goals and Objectives: The goal of this course is for the student to learn how to think mathematically by developing his/her mathematical reasoning and problem solving skills, as well as learn the fundamental concepts involved in linear algebra and differential equations. To achieve this goal, we will cover fundamental concepts on matrices, vector spaces, linear transforms, eigenvalues, eigenvectors, first order differential equations, general linear differential equations, and systems of differential equations.

Important Web Pages: You should check all of these sites regularly (*at least* once a week), as there may be minor changes throughout the semester. All changes will also be announced in class.

- (1) www.blackboard.duq.edu

Announcements, assignments, course documents, the discussion board, exam dates etc. can be found on blackboard. You are expected to log in and check announcements at least once a week.

Username: The first part of your Duquesne University email address. For example, if your duquesne address is **name123@duq.edu**, then your username is **name123**.

Password: The first letter of your last name in lower case and your full social security number without spaces or hyphens (you should change your password under 'student tools' once you've logged on).

- (2) http://www.mathcs.duq.edu/~sel/315spring07/spring07_315hw.html

This is an up to date homework list which contains all of your assignments. You should check this page regularly, as there may be slight changes throughout the semester.

- (3) http://www.mathcs.duq.edu/~sel/315spring07/spring07_315sch.html

This is an up to date schedule containing the dates of all quizzes and exams. You should check this page regularly, as there may be slight changes throughout the semester.

Topics to be Covered: Systems of linear equations, vectors and matrices, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, first order differential equations, higher order and systems of linear differential equations, differential operators.

Tentative Schedule: A *tentative* calendar can be found on the website listed on the previous page. This calendar includes the dates of all exams and quizzes. There may be minor changes to this schedule, so you should check this website on a regular basis.

Attendance: Each student is responsible for all of the material covered during class. This includes lecture notes, homework assignment due dates, material for each quiz and exam, and any important announcements. Attendance is not a factor in your final grade, however, missing class is **never** an excuse for not knowing any of the above mentioned material. If you must miss class due to a verifiable medical emergency, contact me as soon as possible and I will let you know what we covered. Otherwise, you are solely responsible for obtaining the information that you missed.

Homework: Students should read the relevant sections of the text prior to the lecture. Homework problems will be assigned for each lecture. These represent the minimum number of problems you should do in each section and serve together with lecture notes as a basis for questions on the quizzes and exams. **All homework assignments will be posted on the website listed on the previous page.**

Quizzes: There will be 10 in class quizzes. The questions will be based on lecture notes and homeworks. There will be NO make-up quizzes except in the case of a verifiable medical emergency.

Exams: There will be 3 in class exams and a final exam. Exam questions will be based on lecture notes and homeworks. There will be NO make-up exams except in the case of a verifiable medical emergency.

Final Exam: There will be a cumulative final exam given on Friday, April 27 from 1:15-3:15pm.

Grades: You can earn up to **550 points** which will be determined by the following criteria.

10 Quizzes	100 points (10 points each)
3 Exams	300 points (100 points each)
Final Exam	150 points

Grades will be assigned as follows:

	A	A-	B+	B	B-	C+	C	D
average	93% ↑	90% ↑	87% ↑	83% ↑	80% ↑	77% ↑	70% ↑	60% ↑
points	512↑	495↑	↑	479↑	457↑	440↑	424↑	385↑

Classroom Behavior: Students are expected to turn off cell phones during classtime.

Academic Honesty: Discussion of the homework problems (except those on take-home quizzes/exams) is allowed and even encouraged. However, each student must do his/her own work. Assignments which are too similar will receive a zero.

Students are also expected to observe Duquesne University's policy on academic integrity. Quoting from the student handbook:

Violations of academic integrity occur when an individual seeks and receives credit for intellectual work which was performed by someone else, when an individual knowingly falsifies or ignores data in order to reach a predetermined conclusion or when an individual contaminates someone else's data or intellectual property in order to affect the conclusion or outcome.

It is expected that each student's grade should reflect only that student's achievement. It is obvious that the pursuit of knowledge and understanding, along with the quest for truth, cannot be conducted in a dishonest manner. To attempt to do so is contradictory to the objectives and the values of the University.

Therefore, it is the responsibility of the student to maintain academic integrity with regard to class assignments, examinations and any other course requirements, such as term papers, theses and the like. Thus cheating, plagiarism and knowingly assisting others to violate academic integrity are each and all violations of academic integrity.

Violations of academic integrity are subject to disciplinary action, including (but not limited to) lowering of grades, course failure, or suspension or dismissal from the class or from the University. Violations of academic integrity include but are not limited to the following:

- *cheating on examinations, whether giving or receiving assistance or using prohibited material as a test aid (prohibited material includes, but is not limited to, notes or other written documents, unauthorized calculators and/or formulas, programs, software, data and text stored in calculators. When in doubt, the student is responsible for ascertaining whether a given model of calculator is permitted and what information may be stored in the calculator),*
- *submitting a research paper, thesis, dissertation or work for publication which includes work which is not one's own and which fails to give proper attribution to the actual source of the work,*
- *submitting any document without proper attribution composed of sources [including but not limited to] from either the World Wide Web, the Internet, any electronic source, or purchased or copied from another, and which is represented as one's own work,*
- *furnishing false information to any University instructor, official or office with intent to deceive,*
- *forgery, alteration or misuse of any University document, record or instrument of identification (written or computerized),*
- *knowingly assisting another in any of the above.*

Students with disabilities: "Students with disabilities are entitled to reasonable accommodations if needed. If you need accommodations, please contact the Office of Freshman Development and Special Student Services in 309 Duquesne Union (412-396-6657) as soon as possible. Accommodations will not be granted retrospectively."