한국외국어대학교
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Hankuk University of Foreign Studies

2019 Summer Session

MATH 200 Linear Algebra and Differential Equations

Course Outline

Term: July 01-August 02,2019

Class Hours: 8:00-9:50 (Monday through Friday)

Course Code: MATH 200

Instructor: Anja Bankovic

Home Institution: Boston College

Office Hours: TBA and by appointment

Email: anja289@yahoo.com

Credit: 4

Class Hours: This course will have 72 class hours, including 40 lecture hours, 10 lecturer office hours, 10-hour TA discussion sessions, 2-hour review sessions, 10-hour extra classes.

Course Description:
This course is an introduction to the techniques of linear algebra in Euclidean space. Topics covered include matrices, determinants, systems of linear equations, vectors in n-dimensional space, complex numbers, and eigenvalues. The course is required of mathematics majors and minors, but is also suitable for students in the social sciences, natural sciences, and management.

Required Textbooks:
Linear Algebra and its applications by David C. Lay

Grading: The components of your grade are as follows:
Weekly quizzes: 30%
Midterm: 30%
Final: 40%

There will be no extra-credit work! Check with your home universities what grade you need to obtain in order to transfer credits. It will be your responsibility to obtain the letter grade you need. **In no circumstances will you be given a grade you did not deserve based on your written work!**

Homework and Quizzes: Homework assignments will not be collected but will help you prepare for the quizzes. All homework assignments will be given from the textbook, make sure you have the right edition. You are encouraged to make use of your classmates, my office hours, TA's help, discussion sections and the textbook. You are encouraged to discuss the homework and to work together on the problems. One quiz will be assigned at the beginning of class each Monday (starting in the second week of classes). You will work on it individually and it will be 10min long.

Exams: Missing an exam or arriving late for an exam may result in the immediate failure (zero) of that exam. As such, no make-up exams will be given.

Makeup Exams: There will be no written Makeup Exams unless in case of a serious emergency or serious illness for which I am notified in advance. You must have official university documentation to be excused if you miss the exam. In this case only, will other arrangements be made.

Accommodations: Students with disabilities are entitled to equal access in all university programs and activities. Any student that has been identified by the Office of Disabilities Services as one who has need for disability services should contact the professor as soon as possible in order to arrange for their special needs. Students with disabilities should also work with the Office of Disabilities Services to determine their best strategies for insuring success. I want to be sure that I am doing everything I can to accommodate each student in my class. If you have a documented disability, please make an appointment to meet with me as soon as possible. If you have a mobility-related disability, please let me know so we can make arrangements if both elevators are out of order.

Academic integrity: The following are prohibited by the university and will not be tolerated in this class. Any student who commits one of the below acts in this class will automatically be referred to the appropriate academic dean to face the consequences. There will be no exceptions. Please think very care-fully before you consider an action that will risk irreparable damage your academic and professional careers.

Cheating: Cheating is defined as using or attempting to use unauthorized materials, information or study aids in an academic exercise. Examples of cheating include referring to notes, books or other unauthorized materials during an exam, getting answers from another person, or copying homework from someone else. Any student caught cheating will receive an immediate F in the course and risks suspension from the university.

Facilitating Academic Dishonesty: Helping or attempting to help another to commit an act of academic dishonesty is also a punishable offense with similar consequences. Do not help another student cheat. If you are caught helping another student, you will receive an immediate F in the course and risks suspension from the university.

No cell phone use is allowed during class time. If caught using cell phones during lectures you may be asked to leave and lose points off your overall grade.

Dos and Don'ts:
1. Attend every class (unless extreme circumstances prevent you from coming).
2. Pay close attention and take careful notes. Be sure you understand the material from each day. If anything isn't clear, ask in class, before class, after class, email me, or see me in office hours.3. Complete all assigned readings and assignments.
4. Check your email regularly (or have it forwarded) and do not allow your mailbox to fill up.
5. Be in regular contact with the course instructor. You are expected to spend a minimum of 12-16 hours per week outside of class time.
6. Immediately obtain all class notes from any missed classes.2
7. Turn off all electronic devices (other than those that are medically necessary) before class, and leave them off until after class.
8. Arrive on time, seated and ready to listen when the lecture begins. (If you must arrive late, please enter quietly.)
9. Do not begin to pack up before the end of lecture.
10. Do not have social conversations with your neighbor during lecture. Laptops, Cell Phones, iPods, and other electronic devices in a classroom can be distracting to both me and other students. Any student found using any electronic devise during an exam will be assumed to be cheating. Please don't socialize during class. Interruption in class should pertain to the class or some relevant emergency.

Weekly schedule:

Week 1:
1.1 Systems of Linear Equations; 1.2 Row Reduction and Echelon Forms; 1.3 Vector Equations; 1.4 The Matrix Equation; 1.5 Solution Sets of Linear Systems; 1.7 Linear Independence; 1.8 Introduction to Linear Transformations; 1.9 The Matrix of a Linear Transformation;

Week 2:
2.1 Matrix Operations; 2.2 The Inverse of a Matrix; 2.3 Characterizations of Invertible Matrices; 3.1 Intro-duction to Determinants; 3.2 Properties of Determinants; 3.3 Cramers Rule, Volume, and Linear Transformations; 4.1 Vector Spaces and Subspaces 192 4.2 Null Spaces, Column

Spaces, and Linear Transformations

Week 3:
MIDTERM EXAM (2 hours): Locations and date TBA; 4.3 Linearly Independent Sets; Bases; 4.4 Coordinate Systems; 4.5 The Dimension of a Vector Space; 4.6 Rank; 4.7 Change of Basis;

Week 4:
5.1 Eigenvectors and Eigenvalues; 5.2 The Characteristic Equation; 5.3 Diagonalization; 5.4 Eigenvectors and Linear Transformations; 5.5 Complex Eigenvalues; 5.7 Applications to Differential Equations; 6.1 Inner Product, Length, and Orthogonality; 6.2 Orthogonal Sets ;

Week 5:
6.3 Orthogonal Projections; 6.4 The Gram-Schmidt Process; 6.5 Least-Squares Problems; 6.6 Applications to Linear Models; Review for the final; FINAL EXAM (2 hours): Locations and date TBA

Calculator: No calculator or other electronic devices, such as cell phones or tablets, can be used.

Office Hours: TBA: Please come for any help with the class material or homework that you need. If the scheduled office hours do not work for you, I will be happy to arrange to meet with you at another mutually convenient time. Office hours are not a replacement for missed lectures. You are expected to attend every class, and you are responsible for all material discussed in class, and completing all work assigned in class, whether you are present or not. Do not e-mail me for lecture notes. Also, there will often be announcements made in class about the office hours, exams, etc. Once again, if you miss class or arrive late, itis your responsibility to check that or talk to someone else in the class about any important announcements.