

## **MATH 208: Advanced Calculus, SPRING 2021**

**Instructor:** Varga Kalantarov

**Course Web Page:** [http://http://home.ku.edu.tr/~vkalantarov/math208\\_spring21/index.html](http://http://home.ku.edu.tr/~vkalantarov/math208_spring21/index.html)

**Textbook:** Patrick M. Fitzpatrick, Advanced Calculus, Second Edition, 2009, AMS.

**Topics to be covered:** Real numbers and the completeness axiom; Real sequences, series, and their convergence; Real-valued functions of a real variable: continuity, uniform continuity, and differentiability; Euclidean Space: vector and inner product space structures, convergence of sequences, open, closed, compact, and connected subsets; Functions mapping between Euclidean spaces: Continuity, differentiability, the inverse and implicit function theorems.

**Homework:** Suggested homework problems will be assigned regularly but not collected for grading. Students are required to solve these problems in order to gain a better understanding of the subject.

**Evaluation method:** Your progress will be evaluated according to your performance in the quizzes (Q), midterm exam (MT), final exam (F). There will be several quizzes and two midterm exams (MT1&MT2).

Your final grade (G) will be computed according to the formula:

$$G = 15 \% Q + 25\% ( MT1+MT2) + 35\% F .$$

**Eligibility to take the Final Exam:** Students will be permitted to take the final exam, only if the average of their midterm exam grades is 20 or higher.

**Make-ups:** The final exam will be the make-up exam for the missed midterm exams. If a student takes the final as the make-up for a missed midterm exam(s) and as a result the average of his (her) grades for the midterms is below 20, the final exam (s)he had taken will serve only as the make-up for the missed midterm(s) and not as the final exam. If a student is eligible to take the final exam but misses it and has a valid excuse, (s)he will be given a make-up exam.

**Suggested method of study:** Reading the lecture notes and the books is necessary for grasping the subject, but it is by no means sufficient. Students must try to reproduce the definitions and proofs of the theorems, and apply the techniques to other problems.

**Attendance and auditing students:** Students are strongly advised to attend all the lectures and PSs. **4 bonus points** will be added to the total numerical grade (G) of those students who will miss at most 5 lectures.