MAT/MATH 102 – Spring 2022

Online Sections (Section / Instructor (Office and Email) / Lecture times / Office Hour) :

MATH 102.1   Aysel Erey (Z13, aysel.erey@gtu.edu.tr) Mon./Wed. 8:30-10:30
Office Hour:

MATH 102.2   Gülşen Ulucak (Z23, gulsenulucak@gtu.edu.tr) Mon../Wed.. 08:30-10:30
Office Hour: Wed., 12:30-13:30

MATH 102.3   Ayşe Sönmez (Z18, asonmez@gtu.edu.tr) Mon./Wed. 08:30 -10:30
Office Hour: Wed., 12:30-13:30

MATH 102.4   Arda Kör (Z25, a.kor@gtu.edu.tr) Mon./Wed. 11:00 -12:00
Office Hour: Wed., 13:30-14:30

MATH 102.5   Gülden Gün Polat (Z11, gunpolat@gtu.edu.tr), Mon./Wed. 10:30 -12:30
Office Hour: Mon., 13:00-14:00

MATH 102.6   Samire Yazar (Z10, syazar@gtu.edu.tr) Mon./Wed. 10:30 -12:30
Office Hour: Wed., 09:00-10:00

MATH 102.7   Nursel Erey (Z14, nurselerey@gtu.edu.tr) Mon./Wed. 10:30-12:30
Office Hour: Wed., 9:00-10:00

MAT 102.1   Emira Akkurt (Z49, eakkurt@gtu.edu.tr) Mon./Wed. 11:00 -12:00
Office Hour: Wednesday, 10:00-11:00

MAT 102.2   Tahir Azeroğlu (Z43, aliyev@gtu.edu.tr) Mon./Wed.
Office Hour: Monday,

Recitation/Problem Sessions (Face to face lecture times /classroom) (Follow up additional announcements on Teams):

MATH 102.4A   Thu. 15:30-17:20/ Electronical Eng. Building Z02,
Arş. Gör. Dr. Işıl Öner

MATH 102.4B   Thu. 15:30-17:20/ Electronical Eng. Building Z03
Arş. Gör. Ezgi Öztekin

MATH 102.4C   Thu. 15:30-17:20/ Computer Eng. Building Z11
Arş. Gör. Büşra Karadeniz

Course Description: Basic concepts of calculus (limits, differentiation and integration) are to be covered. This is a required course with 7 ECTS.

Language of Instruction: English for **MATH** class code and Turkish for **MAT** class code

Goals of the course: The students will be able to use basic tools of multivariable calculus in their departmental courses.

Prerequisites: MAT / MATH 101

Textbook: Calculus, A complete course, R. A. Adams and C. Essex, 7th Edition, Pearson

Topics to be covered: Numerical sequences and series, power and Taylor series, vectors, line and plane equations, limits and continuity of multivariable functions, partial derivatives and its applications, gradient and directional derivative, method of Lagrange multipliers, double and triple integrals

Announcements: All announcements related to this course will be made on Microsoft Teams. Students are required to follow all announcements.

Attendance: All students must attend all classes and recitation hours (Min. Att. 70%).

Practice Problems: Suggested practice problems from the textbook will be assigned on a regular basis. Working on these problems will help you to better understand the subject covered in class. You are <u>not</u> required to submit your solutions for these problems.

Make-up Exams: Only students who cannot take the exam due to an excuse **accepted by the Dean's Office** can take this exam. Instead of the grade of the exam a student missed, the grade she/he took from this make-up exam is written.

Exams and Grading: There will be <u>one midterm </u>and <u>one final</u> exam. The midterm will determine the %40 of your grade and the final exam will determine %60 of it. **Regardless of the student's midterm grade, the final grade must be at least "20" in order to calculate the course grade. If the student's final grade is below "20", the course grade will be evaluated as "FF".**

Grade "NA": If a student misses both the midterm and the final without valid excuses, then the student receives the grade **NA**.

Midterm Exam: 16.04.2022, Saturday, Time: 10:00
Final Exam: 06.06.2022, Monday, Time : 17:30

Week number/ Start of the week	Topic	Section
1	Sequences and convergence of sequences	9.1
2	Infinite series, Convergence tests for Positive series	9.2, 9.3
3	Absolute and Conditional Convergence, Power series	9.4, 9.5
4	Taylor and Maclaurin Series and Applications	9.6, 9.7
5	Analytic Geometry in Three Dimensions, Vectors	10.1, 10.2
6	The Cross product in 3- space, Planes and Lines, Distances	10.3, 10.4
7	Functions of several variables, Limits and Continuity	12.1, 12.2
8	Partial Derivatives, Higher Order Derivatives, The Chain Rule	12.3, 12.4, 12.5

9	Linear approximations, Gradient and Directional derivatives	12.6, 12.7
10	Implicit Functions, Extreme values	12.8, 13.1
11	Extreme values of functions defined on restricted domains, Lagrange Multipliers	13.2, 13.3
12	Double integrals, Iteration of double integrals in cartesian coordinates	14.1, 14.2
13	Double integrals in polar coordinates, Triple integrals	14.4, 14.5
14	Change of variables in triple integrals	14.6