

## Timetable for the course MATHEMATICAL ANALYSIS 2 (MAT001649)

Lecture	Date	Topic
1	27.02	Functions of several variables, their domains and graphs. Partial and directional derivatives. The gradient. The plane tangent to the graph of a function of two variables. The differential of multivariate function and its applications.
2	13.03	Higher order partial derivatives. Second order derivatives and convexity.
3	27.03	Local and global extrema. Conditional extrema.
4	10.04	The definite integral of a function of two variables. Double integrals over normal and regular regions. <b>Midterm</b>
5	08.05	Change of variables in double integrals. Double integrals in polar coordinates. Applications of double integrals in geometry.
6	22.05	Power series. Taylor and Maclaurin series.
7	05.06	Infinite numerical series. The basic criteria for convergence of series. Absolute convergence.
8	12.06	Improper integrals of type I. Comparison and limit comparison test.

Pr. Class	Date a	Date b	Topic
1	27.02	28.02	Calculation of partial and directional derivatives. Equation of the plane tangent to the graph of a function of two variables. Approximate calculations using the gradient and differential of multivariate function.
2	06.03	07.03	Calculation of higher order partial derivatives. Second order derivatives and convexity. Types of critical points: hill, well, saddle
3	20.03	21.03	Local and global extrema. Sylvester's criterion.
4	03.04	04.04	Conditional extrema: Lagrange's multipliers method. <b>Quiz 1</b>
5	17.04	15.04	Calculation of double integrals over normal and regular regions. <b>Quiz 2</b>
6	24.04	25.04	Performing change of variables in double integrals. Change of variables to polar coordinates.
7	15.05	16.05	Power series. Taylor formula and Taylor-Maclaurin series. <b>Quiz 3</b>
8	29.05	30.05	Infinite numerical series and improper integrals. Basic tests for convergence. <b>Quiz 4</b>

Quiz No.	Topics
1	Calculation of partial and directional derivatives. Equation of the plane tangent to the graph of a function of two variables. Approximate calculations using the gradient and differential of multivariate function. Calculation of higher order partial derivatives.
2	Second order derivatives and convexity. Types of critical points: hill, well, saddle. Sylvester's criterion. Local and global extrema. Conditional extrema: Lagrange's multipliers method.
3	Calculation of double integrals over normal and regular regions. Performing change of variables in double integrals. Change of variables to polar coordinates.
4	Power series. Taylor formula and Taylor-Maclaurin series