

Course Title	CALCULUS II
Course Code	MAT 121
Course Purpose and Objectives	The purpose of this course is to provide knowledge on Indefinite and definite integrals and their estimation. Students will learn various techniques of integration. They will learn how to calculate partial derivatives numerically and symbolically and use them to analyze and interpret the way a function varies. This course includes as well the study of systems of linear equations, matrices, determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors, and their applications. We will discuss about series and sequences as well, as Taylor and Maclaurin series.
Learning Outcomes	<ol style="list-style-type: none"> 1. Calculate partial derivatives of a function. 2. Determine integrals using various techniques. 3. Determine whether a sequence (series) is convergence or not. 4. Use the properties of vectors and operations with vectors 5. Apply matrices properties in order to solve linear equations. 6. Calculate the eigenvectors and eigenvalues of matrices. 7. Utilize advanced techniques of integration to calculate the area of regions in the plane and the volume and surface area of solids of revolution
Course Content	<ul style="list-style-type: none"> • Evaluate integral of functions. • Trigonometrical Substitutions • Partial fractions • Volume of Solids of Revolution (Disc and Shell method) • Series and Sequences • Vectors-The Basics • Partial derivatives of a function • Matrices and Determinants • The solution of liner equations • Eigenvalues and Eigenvectors