

**Faculty of Engineering & Technology**  
**Differentiation with Applications and Algebra**

**Information :**

**Course Code :** EMP111

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Faculty of Engineering & Technology

**Instructor Information :**

Title	Name	Office hours
Lecturer	Ashraf Khattab Hassan Khattab	1
Lecturer	Emad Abdallah Sayed Mustafa	1
Teaching Assistant	Mariam Mohamed Ali Ahmed Elshimey	
Teaching Assistant	Seham Hassan Mohammed Rehan	
Teaching Assistant	Ammar Emad Hamdy Afifi	
Teaching Assistant	Hoda Mohamed Abdullatif Ahmed	
Teaching Assistant	Yossif Ibrahim Motawea Ahmed Kasem	

**Description :**

Calculus: Derivatives with all rules, Trigonometric functions and their derivatives, Definitions, properties, derivatives of transcendental functions. Hyperbolic and inverse hyperbolic functions. Application of derivatives: Extreme of functions and Curve sketching, Differentials and linear Approximation, Chain Rule and Implicit differentiation, Indeterminate forms and L'Hopital's rule, Derivatives in parametric functions.

Algebra: Definitions and properties of determinant and matrices; System of Linear equations, Eigen values and Eigenvectors of a matrix with applications, Gauss elimination method. Theory of nonlinear equations Numerical methods: Iteration methods, Newton's and modified Newton's method, Secant method