

001 MATH Course Syllabus

Course Code	001 MATH
Course Name	Mathematics 1
Credit Hours	3
Contact Hours	3
Instructor Name	Mohammad Hazzazi (coordinator)

Text Book (title, author, and year)

- Calculus - Introduction to calculus - Part I - Mohammed Adel Sudan, Salman
- Calculus fifth edition by Earl William Swokowski

Specific Course Information

Catalog Description	This course begins with the study of functions, the basic tools of calculus, their algebra and families of functions, the basic concept, and the limit of a function, the continuity and the derivative of a function.
Prerequisites	NIL
Co-requisites	NIL
Required/Elective	required

Course Learning Outcomes

See the Mapping in First Page of College Courses

List of Theory Topics

- Review on roots, fractures, analysis and numbers, Intervals on \mathbb{R} . Definition of the absolute value and its properties.
- Domain and range and function operations, Inverse function, Composite function.
- Even and odd Functions, Periodic functions, Basic functions and how to sketch them, Trigonometric functions.
- Definition of limit of a function, Right and left limit, Properties of limits.
- Limit of trigonometric functions, Limits containing infinity.
- Continuity of function at point, Properties of the continuity, Discontinuity. Right and left side continuity.
- Definition of Derivative, Properties of derivative, Chain Rule.
- Tangent line equation, Implicit Differentiation, Derivatives of trigonometric functions, Higher order derivatives.
- Increasing and decreasing functions and the definition of the maximum and minimum values of functions, Roll Theorem and The Mean Value Theorem, L'Hospital's Rule.
- First derivative test, critical points and local extreme, Second derivative test, concavity and points of inflection.
- Asymptotes, Sketching the graph of a function