

NEAR EAST UNIVERSITY – COMMON COURSES COORDINATION UNIT



Ders Bilgi Formu / Course Information Sheet

Ders Kodu / Course Code MTH 101	Ders Adı / Course Name Calculus I	Kredi /Credit 4	AKTS /ECTS 6				
Önkoşul / Pre-requisite: -							
Ders Dili / Language: ENGLISH		Ders Türü /Course Type: Compulsory course	Öğretim Ortamı / Mode of Instruction: Face to Face				
Haftalık Ders Saati / Weekly Hours	Sınıf Saati / Class Hours	Laboratuvar / Laboratory	Uygulama / Practicum	Öğretim Oturumları / Learning Sessions			
	4	0	0	PÇ / PS 0	P / C 0	D / R 0	Ö / T 0
Öğretim Çıktıları / Learning Outcomes		<p>Bu dersin sonunda öğrenciler: After the completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ▶ The student gets the idea about Limits of a functions ▶ The student gets the idea about differentiation ▶ The student gets the idea about sketching the graph of a function ▶ The student gets the idea about integral 					
Ders Tanımı / Course Description		<p>Limits and continuity. Derivatives. Rules of differentiation. Higher order derivatives. Chain rule. Related rates. Rolle's and the mean value theorem. Critical Points. Asymptotes. Curve sketching. Integrals. Fundamental Theorem. Techniques of integration. Definite integrals. L'Hôpital' Rule.</p>					
Dersin Amaçları / Course Objectives		<p>The course is standart first-year course on Calculus providing basic definitions, concepts and methods of limit, differentiations and integration . The objective is two fold : To make students ready to see applications of calculus on subsequent courses and to enable them to continue their study on more advance level.</p>					
Kullanılan Materyaller / Textbooks and/or References		<p>1 Early Transcendental Functions Robert Smith, Roland Minton 3rd.edition, 2007 2 THOMAS' CALCULUS ,Weir , Hass, Giordano Eleventh Edition - 2005</p>					
Ders İçeriği / Course Content		<p>1. Functions and Limits:The Tangent and Velocity Problems, The Limit of a Function 2. Calculating Limits Using the Limit Laws The Precise Definition of a Limit Continuity 3. Derivatives and Rates of Change The Derivative as a Function Differentiation Formulas Derivatives of Trigonometric Functions The Chain Rule 4. Implicit Differentiation Rates of Change in the Natural and Social Sciences Related Rates Linear Approximations and Differentials 5. Applications of Differentiation Maximum and Minimum Values The Mean Value Theorem How Derivatives Affect the Shape of a Graph 6. How Derivatives Affect the Shape of a Graph Limits at Infinity; Horizontal Asymptotes 7. Summary of Curve Sketching. Optimization Problems Antiderivatives 8. Optimization Problems Antiderivatives 9. Antiderivatives Integrals Areas and Distances 10. The Definite Integral The Fundamental Theorem of Calculus Indefinite Integrals and the Net Change Theorem The Substitution Rule 11. Applications of Integration Areas Between Curves Inverse Functions Exponential Functions and Their Derivatives The Natural Logarithmic FunctionThe Natural Exponential Function Derivatives of Logarithmic Functio 12. Trigonometric IntegralsTrigonometric Substitution Integration of Rational Functions by Partial Fractions</p>					