Меѓународен Универзитет Визион - International Vision University
Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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SYLLABUS

COURSE NAME	COURSECODE	SEMESTER	COURSE LOAD	ECTS
CALCULUS I	CEN-1002	1	210	7

Prerequisite(s)	None

Course Language	Macedonian, Turkish, English
Course Type	Required
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra-Curricular Office Hours and Location	

Course Goals	Sets, real and complex numbers. Real arrays. Functions. Limits and Continuity. Indeterminate forms. Difference account, derivatives, partial derivatives, differential, Fully differential. Rolle and Mean Value Theorem. Parametric and Polar Equations. Extremes.
Program Outcomes	Students completing this course will be able to: I. Compute the limit of various functions, use the concepts of the continuity, use the rules of differentiation to differentiate functions. II. Sketch the graph of a function using asymptotes, critical points and the derivative test for increasing/decreasing and concavity properties. III. Set up max/min problems and use differentiation to solve them. IV. Evaluate integrals by using the Fundamental Theorem of Calculus and apply integration to compute areas and volumes by slicing, volumes of revolution, arc length. V. Work with transcendental functions and evaluate integrals using techniques of integration. VI. Use L'Hospital's rule.
Course Contents	Real Numbers and the Real Line, Lines, Circles and Parabolas, Functions and Graphs, classification of functions, Mathematical Models, Junction Function, Shift Rules, trigonometric functions. Limits and Continuity: Rate of Change and Limits, Finding Limits and rules, Description Limit, Limit and One-Sided Limits at Infinity, Infinite Limits and Vertical asymptote, Continuity, Tangents and Derivatives. Derivative: As the function, derivative rules, as the Exchange Rate Derivatives, derivatives of trigonometric functions, and parametric equations Chain Rule, Implicit Differentiation, Related Rates, Linearization and Differentials. Applications of Derivatives: Functions of Extreme Values, Mean Value Theorem, Monotonic Functions and First Order Derivative Test, Concavity and Curve Sketching, Applied Optimization Problems, Indeterminate Forms and L'Hopital's Rule, Newton Method reverse derivatives cost. Integral Finite Total Calculation, Sigma Notation and Finite Limits of sums, The definite integral.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Sets, Numbers, Sequences	Related Chapters of Course Sources
2	Limits and Continuity	Related Chapters of Course Sources
3	Derivatives	Related Chapters of Course Sources
4	Implicit Functions and Derivative of Implicit Functions	Related Chapters of Course Sources
5	Applications of Derivatives	Related Chapters of Course Sources
6	Applications of Derivatives	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Inverse Trigonometric Functions	Related Chapters of Course Sources
9	Exponential and Logarithmic Function	Related Chapters of Course Sources
10	Hyperbolic Functions	Related Chapters of Course Sources
11	Parametric Equations	Related Chapters of Course Sources
12	Polar Coordinates	Related Chapters of Course Sources
13	Curvature, Curvature radius	Related Chapters of Course Sources
14	Rolle, Lagrange and Cauchy's Theorem	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS	**6**		

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

You need to be included in the flow, please follow the course of learning and using that to achieve our success you deserve, you need to practice every day on topics that are covered by the course. It takes practice reading basic and auxiliary literature that is strictly recommended. You should visit classes course I need to make an effort to visit all the professors' lectures. Your activity on the session will be assessed by your professors and the Battle active participant in the discussions that will take place during the time. Students visiting lectures for all at the end if an additional 15 points.

SOURCES

COMPULSORY LITERATURE		
No	**Name of the book**	**Author's Name, Publishing house, Publication Year**
1	Matematik Analiz 1	Mustafa Balcı, Sürat Üniversite Yayınları, 8. Baskı
2	Mimarlık Matematiği	Aybeyan Selım, Muzafer Saraçevic, UVÜ Yayınları
3		

ADDITIONAL LITERATURE		
No	**Name of the book**	**Author's Name, Publishing house, Publication Year**
1	Çözümlü Matematik Analiz Problemleri 1	Mustafa Balcı, Sürat Üniversite Yayınları, 8. Baskı
2		
3		

EVALUATION SYSTEM

Underlying the Assessment Studies	**NUMBER**	**PERCENTAGE OF GRADE**
Attendance/Participation	15	%15
Project / Event	1	%15
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	**17**	**%100**

ETHICAL CODE OF THE UNIVERSITY

In case students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of Macedonia and İnternational Vision University, apply relevant disciplinary rules. İnternational Vision University students are expected never attempts in this kind of behavior.