



Kolegji Riinvest

Zyra për planifikim akademik

Mathematics for Computer Sciences 1 KOMP107

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Mësimdhënësit e Lëndës:	Gëzim Ciriku

Hyrje

This course is introducing basic knowledge of calculus. Due to the curriculum of high school, most of students know the basic idea of arithmetic and basic algebra. In this course, it will be taught the idea of function, limit and derivatives deeply with applications.

Qëllimet

The main purpose of the course is teaching fundamental principles of mathematics which are related to all areas not only engineering but also other types of science. Students will strengthen their knowledge from high school by learning fundamentals of calculus using theorems and more applications.

Rezultatet e pritura të lëndës

- To learn principles of calculus and intensify the knowledge by applications
- To understand the idea of using mathematics in daily life by applications
- To realize the important of mathematics in application and use some computer aided algebraic system to solve problems
- To learn the idea of applying mathematical rules in other courses by examples
- To realize a function by graphing and interpret the graph of a function

Programi

Java	Tema	Aktivitetet
1	Review of Precalculus and Introduction to Calculus	Real Numbers, Functions, and Graphs; Linear and Quadratic Functions
2	Definition of Basic Functions	The Basic Classes of Functions; Trigonometric Functions
3	Definition of Basic Functions	Inverse Functions; Exponential and Logarithmic

		Functions
4	Limits of Functions	A Numerical and Graphical Approach of Limits; Basic Limit Laws
5	Limits of Functions	Limits and Continuity; Evaluating Limits Algebraically
6	Limits of Functions	Trigonometric Limits, Limits at Infinity
7	Differentiation of Functions	Definition of the Derivative; The Derivative as a Function
8	Differentiation of Functions	Product and Quotient Rules; Rates of Change; Higher Derivatives
9	Differentiation of Functions	Derivative of Trigonometric Functions; The Chain Rule; Implicit Differentiation
10	Applications of the Derivatives	Linear Approximation and Applications; Extreme Values
11	Applications of the Derivatives	The Mean Value Theorem and Monotonicity
12	Applications of the Derivatives	The Shape of a Graph: Graph Sketching and Asymptotes
13	Applications of the Derivatives	Graph Sketching and Asymptotes (Continue)
14	Applications of the Derivatives	Graph Sketching and Asymptotes (Continue)

Informata shesë 1:

The module has theoretical and practical component that are carried out through the lectures, exercises and practical approach from everyday life. Report theory / practical work can be estimated 50/50.

Informata shesë 2:

MS Office Products, Mathematica, Maple, Computer Aided Algebraic Systems

Vlerësimi:

Nr.	Lloji	Përqindja	Oblig.	Përshkrimi
1	Kolokvium	50	Po	Midterm Exam 1: Subjects of the midterm exam will be declared by e-learning or by email to students.
2	Kolokvium	50	Po	Midterm Exam 2: Subjects of the midterm exam will be declared by e-learning or by email to students.

Kushtet e përsëritjes:

If during the three exam terms after the lectures (January, April, September or June, August September) the student fails to achieve enough points from all assignments and final exam as described in the syllabus, the student must repeat the course.

Burimet:

- 1. J. Rogawski, Calculus, 2 nd Ed., W.H. Freeman and Company, 2011, ISBN-10: 1429208384, ISBN-13: 978-1429208383
- 2. J. Stewart, Calculus, 7 th Ed., Cengage Learning, 2010, ISBN-10: 0538497904, ISBN-13: 978-0538497909
- 3. G.B. Thomas, M.D. Weir, J.R. Hass, Thomas Calculus, 12 th Ed., Pearson, 2009, ISBN-10: 0321587995, ISBN-13: 978-0321587992

Ndërtimi i ECTS-ve

Aktiviteti	Nr i oreve per Aktivitetin	
Ligjerata:	3	
Ushtrime:	2	
L+U:	75	
Seminar/praktike.:	20	
Studim i vazhdushem:	25	
Pregaditja e Provimit:	20	
Pjesemarrja ne teste:	4	
Pjesemarrja ne provimin final:	2	
Me profesorin dhe asistentin:	10	
Total Ore:	156	
ECTS:	6	