RIINVEST

Kolegji Riinvest

Zyra për planifikim akademik

Mathematics for Computer Sciences 2
KOMP207

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Hyrje

Introduction

Qëllimet

Qëllimi i kursit "Matematika per shkenca kompjuterike 2" është njohja e studentëve me kuptimet themelore nga. disiplinat matematike të theksuara më sipër si dhe aftësimi i tyre që ato kuptime ti përdorin dhe zbatojnë drejtë në mësimin e disiplinave të ndryshme të shkencave kompjuterike.

Rezultatet e pritura të lëndës

- To recognize how to convert word problems related to system of equations into mathematical expressions through matrices
- To identify the relation between real life problems and their structures in matrix notation
- To be able to demonstrate the solutions using presentations in a team work
- To be able to analyze the outputs of the solutions and criticize the possible errors
- To develop a programming code to illustrate the solution of mathematical problems

Programi

Java	Tema	Aktivitetet
1	Integrals	Approximation and Computing Area, Definite Integral
2	Integrals	Fundamental Theorem of Calculus
3	Indefinite Integration	Substitution Method
4	Indefinite Integrations	Integration by Parts
5	Application of Integrals	Area between two curves
6	Vectors and Introduction to System of	Definition of vector, Operations on vectors, Dot product, Applications; Linear equations in N variable; Solutions and solution set; System of Linear equations; Number of solutions of a system of linear equations in two-

	to System of Equations	equations, Number of solutions of a system of linear equations in two dimensional and three-dimensional space;
7	Introduction to System of Equations	Solving a system of linear equations; Substitution method; Row echolon form; back-substitution in row-echolon form; Elimination method
8	Introduction to System of Equations and Matrices	Definition of Matrices; Row equivalent matrices; Elementary row operations to solve a system; Augmented matrix; Row-echelon form and reduced row-echelon form;
9	Matrices	Operations with matrices; Matrix addition, subtraction, multiplication and scalar multiplication; Properties of matrix operations
10	Matrices	Algebra of matrices; The transpose and the inverse of a matrix
11	Matrices	Elementary matrices and elementary row operations; The LU-factorization
12	Determinant of a Matrices	Determinant of a 2x2 and 3x3 matrices; Square matrices; Triangular matrices; Determinant and elementary Row/Column operations
13	Determinant of a Matrices	Properties of determinant determinant and inverse of a matrix; Determinant and the transpose of a matrix, The adjoint matrix; Cramer's rule
14	Algorithms of Matrix operations	Matrix Operations, Naive Gauss elimination, Gauss-Jordan Elimination; Working on pseudo codes of algorithms

Informata shtesë 1:

Lënda e ka komponentin teorike dhe praktike te cilat realizohen nëpërmjet te ligjëratave, diskutimeve ushtrimeve dhe detyrave projektuese me qasje praktike nga jeta e përditshme. Raporti teori praktik mund te vlerësohet 50/50.

Informata shtesë 2:

MS SPSS, MS Word, MS Excel, MS Power Point, MS Project, MS Access, MS Visio, MS Visual Studio, MS SQL Server, Eclipse, NetBeans, Enterprise Architect, HTML, CSS, AJAX, XML, JavaScript, C#, Java, Java Android

Vlerësimi:

Nr.	Lloji	Përqindja	Oblig.	Përshkrimi
1	Kolokvium	50	Po	Midterm Exam 1: Subjects are related to integration and system of equations
2	Kolokvium	50	Po	Midterm Exam 2: Subjects are related to matrices, determinants and applications

Kushtet e përsëritjes:

Nëse në tri afatet pas ligjëratave (janar, prill, shtator ose qershor, gusht shtator) studenti nuk arrin ti realizojë pikët e mjaftueshme nga kapitulli i detyrave në syllabus, studenti duhet ta përsëris lëndën.

Burimet:

- "[1] Keneth Rosen: Discrete Mathematics and Its Applications, [2] Peter Grossman, Discrete Mathematics for computing, Monach University, 1995.

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	