



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

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## SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
<b>LINEAR ALGEBRA and APPLICATIONS</b>	<b>CEN-3005</b>	<b>5</b>	<b>180</b>	<b>6</b>

<b>Prerequisite(s)</b>	None
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<b>Course Language</b>	Macedonian, Turkish, English
<b>Course Type</b>	Elective
<b>Course Level</b>	First Cycle
<b>Course Lecturer</b>	
<b>Course Assistants</b>	
<b>Classroom</b>	
<b>Extra-Curricular Office Hours and Location</b>	<b>Meeting:</b> <b>Consultancy:</b>

<b>Course Objectives</b>	Ability to use basic sciences in the field of Computer Engineering, Develop mathematical thinking, to solve the problems encountered in Mathematics, physics and engineering
<b>Course Learning Outcomes</b>	The students who successfully complete this course, will be able to; <ul style="list-style-type: none"> <li>• To enable students to use mathematics in Computer engineering.</li> <li>• To enable students Develop mathematical thinking.</li> <li>• To enable students to solve the problems encountered in Mathematics, physics and engineering.</li> </ul>
<b>Course Contents</b>	Matrix teory. Operation with Matrix, Unit matrix. Inverse of a matrix. Obtaining cofactor, Transpose of a matrix, Concept of rank, Concepts of linear dependency and independency, Obtaining solutions of linear equations through Gauss, Gauss-Jordan and Matrix inverse methods, Obtaining solutions of equation systems through the concept of rank, Solution of homogeneous equation systems, Obtaining of eigen values and eigenvectors, Transformation.

## WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

<b>Week</b>	<b>Subjects</b>	<b>Related Preparation</b>
1	Introduction	Related Chapters of Course Sources
2	Matrix theory	Related Chapters of Course Sources
3	Operation with Matrix	Related Chapters of Course Sources
4	Description of Special Matrix	Related Chapters of Course Sources
5	Obtaining cofactor, Transpose of a matrix	Related Chapters of Course Sources
6	Determinant	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Determinant	Related Chapters of Course Sources
9	Linear equations	Related Chapters of Course Sources
10	Obtaining solutions of linear equations through Gauss, Gauss-Jordan	Related Chapters of Course Sources
11	Obtaining solutions of linear equations through Gauss, Gauss-Jordan	Related Chapters of Course Sources
12	Obtaining solutions of linear equations through Matrix inverse methods	Related Chapters of Course Sources
13	Obtaining solutions of linear equations through Matrix inverse methods	Related Chapters of Course Sources
14	Vector spaces	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
<b>Total Work Load</b>			
<b>ECTS</b>	<b>6</b>		

**GENERAL PRINCIPLE RELATED WITH COURSE**

Dear students,

In order to be included, learn and achieve full success that you deserve in the courses you need to come well prepared by reading the basic and secondary textbooks. We are expecting from you carefully to obey to the course hours, not to interrupt the lessons unless is very indispensable, to be an active participant on the courses, easily to communicate with the other professor and classmates, and to be interactive by participating to the class discussions. In case of unethical behavior both in courses or on exams, will be acting in framework of the relevant regulations. The attendance of the students will be checked in the beginning, in the middle or at the end of the lessons. Throughout the semester the students who attend to all lectures will be given 15 activity-attendance points in addition to their exam grades.

**SOURCES**

<b>COMPULSORY LITERATURE</b>		
<b>No</b>	<b>Name of the book</b>	<b>Author's Name, Publishing House, Publication Year</b>
<b>1</b>	Lineer cebir	Seymour Lipschutz, Nobel Yayınevi, İstanbul, 2000
<b>2</b>	Linear Algebra	Georgi E. Shilov, Dover Publication, New York, 1977
<b>3</b>		

<b>COMPULSORY LITERATURE</b>		
<b>No</b>	<b>Name of the book</b>	<b>Author's Name, Publishing House, Publication Year</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		

## EVALUATION SYSTEM

<b>Underlying the Assessment Studies</b>	<b>NUMBER</b>	<b>PERCENTAGE OF GRADE</b>
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
<b>TOTAL</b>	<b>17</b>	<b>%100</b>

## ETHICAL CODE OF THE UNIVERSITY

In case of the students are cheating or attempt to cheat on exams, and in the case of not to reference the sources used in seminar studies, assignments, projects and presentations, in accordance to the legislations of the Ministry of Education and Science of Republic of Macedonia and International Vision University, will be applied the relevant disciplinary rules. International Vision University students are expected never to attempt to this kind of behavior.