	Course name: MATH 214 Linear Algebra II	Department: Mathematics				Semester
FACULTY OF ENGINEERING AND NATURAL SCIENCES						4
	Methods of Education					Credit (ECTS)
	Lecture	Recitation	Lab	Exams	Homework	Other	Total	
	56	0	0	55	0	140	251	8

Language	English
Compulsory/Elective	Compulsory
Prerequisites	MATH 213 Linear Algebra I

	Weeks	Subjects
Course Contents	1	• Elementary Canonical Forms • Characteristic (Eigen) Values
	2	• Annihilating Polynomials • Invariant Subspaces
	3	• Simultaneous Triangulation • Simultaneous Diagonalization
	4	• Direct-Sum Decompositions • Invariant Direct Sums • The Primary Decomposition Theorem
	5	• Cyclic Subspaces and Annihilators • Cyclic Decompositions and the Rational Form • The Jordan Form
	6	• Inner Products • Inner Product Spaces • Linear Functionals and Adjoints
	7	• Unitary Operators • Normal Operators
	8	• Operators on Inner Product Spaces
	9	• Operators on Inner Product Spaces
		• Forms on Inner Product Spaces
	11	• Positive Forms
	12	• Quadratic forms
	13	• Bilinear Form
	14	• Symmetric Bilinear Forms

Course Objectives	At the end of this course, the student will learn • The main concepts about elementary canonical Forms • the main properties of inner product spaces, operators on inner product spaces and bilinear forms.

Learning Outcomes and Competences	At the end of this course a student should learn • definitions of eigenvalues, eigenvectors and eigenspaces. • diagonalizability, diagonalization process, simultaneous diagonalization. • to find minimal and characteristic polynomials of linear operators. • to find Jordan canonical form of matrices and to use some of their applications. • definition of inner product, norm. • definition of orthogonal and orthonormal bases. • to compute orthogonal projection. • main properties of some important operators on inner product spaces. • main properties of bilinear forms.		
Textbook and /or References	Linear Algebra, Second Edition Authors: Kenneth Hoffman, Ray Kunze Publisher: Prentice-Hall, (2010)		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	40
	Quizzes		
	Homework		
	Projects		
	Term Paper		
	Laboratory work		
	Other		
	Final Exam	X	60
Instructors			