



**AFYON KOCATEPE UNIVERSITY**  
**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**  
**DEPARTMENT OF MATHEMATICS**



**DOCTOR OF PHILOSOPHY (PhD) PROGRAM**

**FIRST YEAR**

FIRST SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6501	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6601	THESIS PREPARATION	C	0	1	1	0	1	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
<b>TOTAL</b>			<b>20</b>	<b>1</b>	<b>21</b>	<b>12</b>	<b>30</b>	

SECOND SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6502	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6602	THESIS PREPARATION	C	0	1	1	0	1	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
<b>TOTAL</b>			<b>20</b>	<b>1</b>	<b>21</b>	<b>12</b>	<b>30</b>	



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**SECOND YEAR**

THIRD SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6503	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6603	THESIS PREPARATION	C	0	1	1	0	1	
MAT-6701	SEMINAR	C	0	2	2	0	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
	ELECTIVE COURSE	E	3	0	3	3	5	
<b>TOTAL</b>			<b>17</b>	<b>3</b>	<b>20</b>	<b>9</b>	<b>30</b>	

FOURTH SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6504	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6604	THESIS	C	0	1	1	0	21	
<b>TOTAL</b>			<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>30</b>	



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**THIRD YEAR**

FIFTH SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6505	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6605	THESIS	C	0	1	1	0	21	
<b>TOTAL</b>			<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>30</b>	

SIXTH SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6506	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6606	THESIS	C	0	1	1	0	21	
<b>TOTAL</b>			<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>30</b>	

**FOURTH YEAR**

SEVENTH SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6507	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6607	THESIS	C	0	1	1	0	21	
<b>TOTAL</b>			<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>30</b>	

**EIGHTH SEMESTER**

EIGHTH SEMESTER								
COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*					
			TH	AP	TO	CR	EC	
MAT-6508	DIRECTED FIELD STUDIES	C	8	0	8	0	9	
MAT-6608	THESIS	C	0	1	1	0	21	
<b>TOTAL</b>			<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>30</b>	



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**ELECTIVE COURSES**

COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*				
			TH	AP	TO	CR	EC
FBE-5001	SCIENTIFIC RESEARCH AND METHODS	E	3	0	3	3	5
MAT-5001	RING THEORY I	E	3	0	3	3	5
MAT-5002	MULTILINEAR ALGEBRA I	E	3	0	3	3	5
MAT-5003	MULTILINEAR ALGEBRA II	E	3	0	3	3	5
MAT-5004	SINGULAR INTEGRALS I	E	3	0	3	3	5
MAT-5005	TIME SCALE AND DYNAMIC EQUATIONS I	E	3	0	3	3	5
MAT-5006	ADVANCED PROJECTIVE GEOMETRY I	E	3	0	3	3	5
MAT-5007	EUCLIDEAN AND NONEUCLIDEAN GEOMETRIES I	E	3	0	3	3	5
MAT-5008	MINIQUATERNION GEOMETRY I	E	3	0	3	3	5
MAT-5009	CATEGORY THEORY I	E	3	0	3	3	5
MAT-5010	INTRODUCTION TO DIFFERENCE EQUATIONS I	E	3	0	3	3	5
MAT-5011	INTRODUCTION TO DIFFERENCE EQUATIONS II	E	3	0	3	3	5
MAT-5012	OSCILLATIONS THEORY II	E	3	0	3	3	5
MAT-5013	SPECIFIC TITLES IN ALGEBRA I	E	3	0	3	3	5
MAT-5014	SPECIFIC TITLES IN ALGEBRA II	E	3	0	3	3	5
MAT-5015	ADVANCED ANALYSIS I	E	3	0	3	3	5
MAT-5016	ADVANCED ANALYSIS II	E	3	0	3	3	5
MAT-5017	ADVANCED PROJECTIVE GEOMETRY II	E	3	0	3	3	5
MAT-5018	ALGEBRAIC TOPOLOGY I	E	3	0	3	3	5
MAT-5019	ALGEBRAIC TOPOLOGY II	E	3	0	3	3	5
MAT-5020	RING THEORY II	E	3	0	3	3	5
MAT-5021	CATEGORY THEORY II	E	3	0	3	3	5
MAT-5022	SINGULAR INTEGRALS II	E	3	0	3	3	5
MAT-5023	TENSOR ALGEBRA I	E	3	0	3	3	5
MAT-5024	TENSOR ALGEBRA II	E	3	0	3	3	5
MAT-5025	FRACTIONAL INTEGRALS II	E	3	0	3	3	5
MAT-5026	ADVANCED DIFFERENTIAL EQUATIONS I	E	3	0	3	3	5
MAT-5027	ADVANCED DIFFERENTIAL EQUATIONS II	E	3	0	3	3	5
MAT-5028	TENSOR ALGEBRA I	E	3	0	3	3	5



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**ELECTIVE COURSES**

COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*				
			TH	AP	TO	CR	EC
MAT-5029	FRACTIONAL INTEGRALS I	E	3	0	3	3	5
MAT-5030	MOTION GEOMETRY I	E	3	0	3	3	5
MAT-5031	MOTION GEOMETRY II	E	3	0	3	3	5
MAT-5032	OSCILLATIONS THEORY I	E	3	0	3	3	5
MAT-5033	TOEPLITZ AND HANKEL FORMS I	E	3	0	3	3	5
MAT-5034	FRACTIONAL DIFFERENTIAL EQUATIONS I	E	3	0	3	3	5
MAT-5035	FRACTIONAL DIFFERENTIAL EQUATIONS II	E	3	0	3	3	5
MAT-5036	COMPLEX ANALYSIS I	E	3	0	3	3	5
MAT-5037	COMPLEX ANALYSIS II	E	3	0	3	3	5
MAT-5038	INTEGRAL INEQUATIONS IN TIME SCALE II	E	3	0	3	3	5
MAT-5039	TOEPLITZ AND HANKEL FORMS II	E	3	0	3	3	5
MAT-5040	TIME SCALE AND DYNAMIC EQUATIONS II	E	3	0	3	3	5
MAT-5041	EUCLIDEAN AND NONEUCLIDEAN GEOMETRIES II	E	3	0	3	3	5
MAT-5042	MINIQUATERNION GEOMETRY II	E	3	0	3	3	5
MAT-5043	INTEGRAL INEQUATIONS IN TIME SCALE I	E	3	0	3	3	5
MAT-5044	NUMERIAL SOLUTIONS OF DIFFERENTIAL EQUATIONS WITH COMPUTER APPLICATIONS I	E	3	0	3	3	5
MAT-5045	NUMERIAL SOLUTIONS OF DIFFERENTIAL EQUATIONS WITH COMPUTER APPLICATIONS II	E	3	0	3	3	5
MAT-5046	INTRODUCTION TO MATHEMATICAL LOGIC I	E	3	0	3	3	5
MAT-5047	INTRODUCTION TO MATHEMATICAL LOGIC II	E	3	0	3	3	5
MAT-6001	DISTRUBUTION THEORY AND FOURIER TRANSFORMATIONS I	E	3	0	3	3	5
MAT-6002	DISTRUBUTION THEORY AND FOURIER TRANSFORMATIONS II	E	3	0	3	3	5
MAT-6003	SEMI-RIEMANNIAN GEOMETRY I	E	3	0	3	3	5
MAT-6004	SEMI-RIEMANNIAN GEOMETRY II	E	3	0	3	3	5
MAT-6005	ANALYTIC HYPERBOLIC GEOMETRY I	E	3	0	3	3	5
MAT-6006	ANALYTIC HYPERBOLIC GEOMETRY II	E	3	0	3	3	5
MAT-6007	WEB GEOMETRY I	E	3	0	3	3	5
MAT-6008	WEB GEOMETRY II	E	3	0	3	3	5
MAT-6009	METRIC GEOMETRY I	E	3	0	3	3	5
MAT-6010	METRIC GEOMETRY II	E	3	0	3	3	5

\* C : COMPULSORY - E : ELECTIVE - TH: THEORY - AP: APPLICATION - TO: TOTAL - CR: CREDIT - EC:ECTS



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COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*				
			TH	AP	TO	CR	EC
MAT-6011	DIFFERENTIABLE MANIFOLDS I	E	3	0	3	3	5
MAT-6012	DIFFERENTIABLE MANIFOLDS II	E	3	0	3	3	5
MAT-6013	MATRIX ANALYSIS I	E	3	0	3	3	5
MAT-6014	MATRIX ANALYSIS II	E	3	0	3	3	5
MAT-6015	ADVANCED FUNCTIONAL ANALYSIS I	E	3	0	3	3	5
MAT-6016	ADVANCED FUNCTIONAL ANALYSIS II	E	3	0	3	3	5
MAT-6017	PARTIAL DIFFERENTIAL EQUATIONS I	E	3	0	3	3	5
MAT-6018	PARTIAL DIFFERENTIAL EQUATIONS I	E	3	0	3	3	5
MAT-6019	BEHAVIOUR OF SOLUTONS OF DIFFERENCE EQUATIONS I	E	3	0	3	3	5
MAT-6020	BEHAVIOUR OF SOLUTONS OF DIFFERENCE EQUATIONS II	E	3	0	3	3	5
MAT-6021	QUADRATIC PLANE GEOMETRY I	E	3	0	3	3	5
MAT-6022	QUADRATIC PLANE GEOMETRY II	E	3	0	3	3	5
MAT-6023	SEQUENCE SPACES AND SUMMABILITY I	E	3	0	3	3	5
MAT-6024	SEQUENCE SPACES AND SUMMABILITY II	E	3	0	3	3	5
MAT-6025	DIVERGENT SERIES I	E	3	0	3	3	5
MAT-6026	DIVERGENT SERIES II	E	3	0	3	3	5
MAT-6027	MODULE THEORY I	E	3	0	3	3	5
MAT-6028	MODULE THEORY II	E	3	0	3	3	5
MAT-6029	FUNCTIONS OF COMPLEX VARIABLE I	E	3	0	3	3	5
MAT-6030	FUNCTIONS OF COMPLEX VARIABLE II	E	3	0	3	3	5
MAT-6031	POTENTIAL THEORY IN EUCLIDIAN SPACES I	E	3	0	3	3	5
MAT-6032	POTENTIAL THEORY IN EUCLIDIAN SPACES II	E	3	0	3	3	5
MAT-6033	COMPACT PROJECTIVE PLANES I	E	3	0	3	3	5
MAT-6034	COMPACT PROJECTIVE PLANES II	E	3	0	3	3	5
MAT-6035	INTEGRAL EQUATIONS I	E	3	0	3	3	5
MAT-6036	INTEGRAL EQUATIONS II	E	3	0	3	3	5
MAT-6037	ALGEBRA I	E	3	0	3	3	5
MAT-6038	ALGEBRA II	E	3	0	3	3	5
MAT-6039	FUNCTIONAL ANALYSIS METHODS IN SUMMABILITY THEORY I	E	3	0	3	3	5



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COURSE CODE	COURSE NAME	C/E	COURSE CREDIT*				
			TH	AP	TO	CR	EC
MAT-6040	OSCILLATION OF DYNAMIC EQUATIONS ON TIME SCALES I	E	3	0	3	3	5
MAT-6041	OSCILLATION OF DYNAMIC EQUATIONS ON TIME SCALES II	E	3	0	3	3	5
MAT-6042	INTEGRAL EQUATIONS I	E	3	0	3	3	5
MAT-6043	INTEGRAL EQUATIONS II	E	3	0	3	3	5
MAT-6044	REIMANNIAN GEOMETRY OF CONTACT AND SYMPLECTIC MANIFOLDS I	E	3	0	3	3	5
MAT-6045	REIMANNIAN GEOMETRY OF CONTACT AND SYMPLECTIC MANIFOLDS II	E	3	0	3	3	5
MAT-6046	QUATERNIONS AND QUETERNION MATRICES I	E	3	0	3	3	5
MAT-6047	QUATERNIONS AND QUETERNION MATRICES II	E	3	0	3	3	5
MAT-6048	HYPERBOLIC GEOMETRY I	E	3	0	3	3	5
MAT-6049	HYPERBOLIC GEOMETRY II	E	3	0	3	3	5
MAT-6050	MATRIX TRANSFORMATION ON SEQUENCE SPACES I	E	3	0	3	3	5
MAT-6051	MATRIX TRANSFORMATION ON SEQUENCE SPACES II	E	3	0	3	3	5
MAT-6052	GEOMETRY OF REAL INNER PRODUET SPACES I	E	3	0	3	3	5
MAT-6053	GEOMETRY OF REAL INNER PRODUET SPACES II	E	3	0	3	3	5
MAT-6054	NEW SEQUENCE SPACES DEFINED BY MATRICES I	E	3	0	3	3	5
MAT-6055	NEW SEQUENCE SPACES DEFINED BY MATRICES II	E	3	0	3	3	5
EGT-6001	DEVELOPMENT AND LEARNING	E	3	0	3	3	5
EGT-6002	INSTRUCTIONAL PLANNING AND EVALUATION	E	3	0	3	3	5