



## ESOGÜ Mathematics and Computer Sciences COURSE INFORMATION FORM

<b>SEMESTER</b>	Spring
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<b>COURSE CODE</b>	821616009	<b>COURSE NAME</b>	Symbolic Computation II
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY ( ) ELECTIVE ( x )	Turkish
<b>COURSE CATAGORY</b>							
<b>Mathematics</b>	<b>Computer</b>						<b>Social Science</b>
x	x						
<b>ASSESSMENT CRITERIA</b>							
<b>MID-TERM</b>				<b>Evaluation Type</b>	<b>Quantity</b>	<b>%</b>	
				1st Mid-Term	1	50	
				2nd Mid-Term			
				Quiz			
				Homework			
				Project			
				Report			
				Others (.....)			
<b>FINAL EXAM</b>					1	50	
<b>PREREQUIEITE(S)</b>				None.			
<b>COURSE DESCRIPTION</b>				Introduction numerical and symbolic computation methods. Algebraic operations. Solutions of differential equations. Vector analysis. Matrix operations. Plotting two and three dimensional graphics. Advanced programming techniques and applications.			
<b>COURSE OBJECTIVES</b>				The main of the course is symbolic computation methods perform with programming languages. Solving engineering problems with symbolic computation methods and gain this ability.			
<b>ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION</b>				Solving engineering problems with symbolic computation methods and applications of normal life.			
<b>COURSE OUTCOMES</b>				Learning general information about symbolic computation methods. Applications of symbolic computation with programming languages. Solving engineering problems with symbolic computation methods.			
<b>TEXTBOOK</b>				Macsyma Mathematics and System Reference Manual, 16th ed., Macsyma, Inc., USA			
<b>OTHER REFERENCES</b>							
<b>TOOLS AND EQUIPMENTS REQUIRED</b>				None			

COURSE SYLLABUS	
WEEK	TOPICS
1	Introduction numerical and symbolic computation methods.
2	Generate programming expressions.
3	Algebraic operations.
4	Algebraic operations.
5	Solutions of equations
6	Difference, integral
7	Limit , series
8	Midterm exam
9	Differential equations
10	Laplace transformation, vector analysis.
11	Matrix operations
12	Plotting two and three dimensional graphics.
13	Symbolic programming
14	Advanced programming techniques
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics and Computer Sciences,	x		
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	x		
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,		x	
4	The skill to solve and design a problem process in accordance with a defined target,		x	
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	x		
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	x		
7	The skill to make team work within the discipline and interdisciplinary,	x		
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,		x	
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,		x	
10	The skill to have professional and ethical responsibility,		x	
11	The skill to have consciousness for quality issues and scientific research,		x	
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,		x	
13	Ability to solve problems in the working life faced to find an appropriate algorithms via mathematical modeling and to write computer programs,	x		
14	The skill to developed design of software systems at different complex levels,	x		
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.		x	
1:None. 2:Partially contribution. 3: Completely contribution.				

**Instructor(s):** Assoc. Prof. Ahmet Faruk ASLAN

**Signature:**

**Date:**