ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821617018	COURSE NAME	Topics in Ordinary Differential Equations I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
7	2	2	0	3	5	COMPULSORY (x) ELECTIVE ( )	Turkish

COURSE CATAGORY		
Mathematics	Computer	Social Science
x		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None.
COURSE DESCRIPTION	Asymptotic expansions, asymptotic expressions of the second order equations, singular perturbation of first order differential equations
COURSE OBJECTIVES	Asymptotic expansions of second-order differential equations with the expressions.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Gaining the ability of problem solution
COURSE OUTCOMES	1 - Asymptotic expansions 2 - The second-order asymptotic expressions, equations, 3 - Singular perturbation of first order differential equations
TEXTBOOK	Topics in Ordinary Differential Equations, W. D. Lakins
OTHER REFERENCES	A Short Course in Differential eqautions, E. D. Rainville,Differential Equations with Boundary-Value Problems, D. G. Zill,
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Asymptotic expansions
2	Asymptotic expansions (continue)
3	Asymptotic expansions (continue)
4	Asymptotic expansions (continue)
5	Asymptotic expansions (continue)
6	Asymptotic expressions of second-order equations
7	Asymptotic expressions of second-order equations (continue)
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9	Asymptotic expressions of second-order equations (continue)
10	Asymptotic expressions of second-order equations (continue)
11	Asymptotic expressions of second-order equations (continue)
12	The first order differential equations with singular perturbation
13	The first order differential equations with singular perturbation (continue)
14	The first order differential equations with singular perturbation (continue)
15	The first order differential equations with singular perturbation (continue)
16,17	Final

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 algoritms 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): Prof. Dr. Dursun ESER

Signature: **Date:** 08-29-2022