Course name	Course code	Contact Hours			Year	Level	Prerequisite
		Lectures	Sec/Lab	Credit hours			
Differential Equations 2	332MATH	3	-	3	3	6	331MATH

Student's workload				
In-class activities	**Contact Hours**	**Self-learning/study**	**Hours**	
Lectures	45	HW/Assignments	22	
Laboratory		Study for exam	47	
Exams and quizzes	5	Working for lab		
		Preparation for classes	45	
Total	**50 ~42**	Total	**114**	
Total Learning Hours **= 156**		Equivalent **ECTS points** = Total LH/28 = **5.57**		

(1) Brief Course Description

Differential Equations is an important course in applied mathematics, studying this course enables the student to solve differential equations with variable coefficients and solve some boundary value problems by using different methods.

(2) Course Objectives

After finishing the course, the student is expected to be familiar with the following:
- Concepts and understanding in the topics of the course .
- Use of proper mathematical notation
- Use of deductive methods and critical thinking to solve problems

(3) Course Contents

- Higher order differential equations with variables coefficients
- System of differential equations
- Method of variation of parameters to solve differential equations
- Method of undetermined coefficients to solve differential equations
- Power series solution of differential equations
- Boundary value problems
- Stability of solution.

(4) Assessment Criteria

- First mid-term exam 20%
- Second mid-term exam 20%
- Quizzes and home work 10%
- Final exam 50%

(5) <u>Course Teaching Strategies</u>
- Academic lectures
- Scientific discussions
- Home work
- Mini model education
- Assignments to prepare scientific projects

(6) <u>Text Book</u>
- A First Course in Differential Equations, 8th edition, Dennis G. Zill. Copy right 2005.

(7) <u>Reference Books</u>
- Differential Equations, 3rd ed., P. Blanchard, R. Devaney and G. Hall, Thomson Brooks / Cole, Boston University, 2006.
- Ordinary Differential Equations,
- D. K. Arrowsmith, C. M. Place, Chapman & Hall. (1982).
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