

PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY
COLEGE OF ENGINEERING AT WADI ADDAWASER

Teaching Plan

Course Number and Name	Math 2040 / Differential Equations		
Contact Hours	4/week	Credit Hours	3
Prerequisites	--	Semester & Year	Second / 2016
Required, Elective or Selective course:	R		
Instructor's/ Coordinators Name	Dr. Nisar Kottakkaran Sooppy		

Course Description

Introduction to Differential Equations, Equations with separable variables ,Homogenous Equations, Exact Equations. Linear Equations of first order, Linear Equations of Second order, Direct Deduction, Comparison Theorems . Linear Equations with constants coefficients, inhomogenous case , Undetermined coefficients methods , methods of variations parameters, Systems of differential equations , Fourier Series ,Even and Odd Fourier Series, Fourier Reorientation integral , Fourier integral . Even and Odd Fourier integral.

References

1. Morris Tenenbaum, Harry Pollard "Ordinary Differential Equations : An Elementary Textbook for Students of mathematics , Engineering and Sciences " Dover Publication Last Edition .

Class Schedule

Lecture:	3 units	(2 hours X 15 weeks)
Tutorial:	0 unit	(2 hours X 15weeks)
Laboratory:	0 unit	(0 hours X 15 weeks)

Course Outcomes

CO1	· Provide students with Introduction to Differential Equations,. Linear Equations of first order, Linear Equations of Second order
CO2	· Increase student ability and skills of solving Equations with separable variables ,Homogenous Equations, Exact Equations. Linear Equations of first order, Linear Equations of Second .
CO3	· Train student to practice intellectual skills to solve Linear Equations with constants coefficients.
CO4	· Increase student experience in solving Undetermined coefficients methods , methods of variations parameters, Systems of differential equations ,
CO5	· Provide students with principles of Fourier Series ,Even and Odd Fourier Series, Fourier Reorientation integral , Fourier integral . Even and Odd Fourier integral.

Assesment Method

Assessment	CO1	CO2	CO3	CO4	CO5	Distribution
Quizzes	√	√	√	√	√	3 %
Assignments	√	√	√	√	√	3%
Test 1	√	√				15 %
Test 2			√	√		15 %
Attendance						4 %
Final Exam	√	√	√	√	√	60 %
Total						100%

RELATIONSHIP TO PROGRAM OUTCOMES

No.	Course Outcomes	Program Outcomes											
		1	2	3	4	5	6	7	8	9	10	11	
CO1	· Provide students with Introduction to Differential Equations,. Linear Equations of first order, Linear Equations of Second order	√								√			
CO2	· Increase student ability and skills of solving Equations with separable variables ,Homogenous Equations, Exact Equations. Linear Equations of first order, Linear Equations of Second ..	√								√			
CO3	· Train student to practice intellectual skills to solve Linear Equations with constants coefficients.									√			
CO4	· Increase student experience in solving Undetermined coefficients methods , methods of variations parameters, Systems of differential equations ,				√					√			
CO5	· Provide students with principles of Fourier Series ,Even and Odd Fourier Series, Fourier Reorientation integral , Fourier integral . Even and Odd Fourier integral.									√			√
Course Outcome Analysis		√			√					√			√

Topics to be Covered

Week	Topics	Delivery	Assessment
1	Introduction to Differential Equations, Equations with separable variables	L	
2	Concepts of Homogenous Equations, Exact Equations.	L	Quiz,/Assignment/Test/ Final Exam
3	. Linear Equations of first order, Linear Equations of Second order,	L	Quiz,/Assignment/Test/ Final Exam
4	Direct Deduction, Comparison Theorems	L	Quiz,/Assignment/Test/ Final Exam
5	Linear Equations with constants coefficients	L	Quiz,/Assignment/Test/ Final Exam
6	inhomogenous case , Undetermined coefficients methods	L	Quiz,/Assignment/Test/ Final Exam
7	methods of variations parameters	L	Quiz,/Assignment/Test/ Final Exam
8	Systems of differential equations	L	Quiz,/Assignment/Test/ Final Exam
9	Fourier Series -I	L	Quiz,/Assignment/Test/ Final Exam
10	Fourier Series -II	L	Quiz,/Assignment/Test/ Final Exam
11	Even and Odd Fourier Series	L	Quiz,/Assignment/Test/ Final Exam
12	Fourier Reorientation integral .	L	Quiz,/Assignment/Test/ Final Exam
13	Fourier integral .	L	Quiz,/Assignment/Test/ Final Exam

14	Even and Odd Fourier integral.,	L	Quiz,/Assignment/Test/ Final Exam
15	Revisions.	L	Quiz,/Assignment/test/ Final Exam

Prepared by:	Checked by:	Approved by:
Name: Dr. Nisar Kottakkaran Sooppy Position: Assistant Professor Date : 25 May 2016	Name: Dr. Omer Mohamed Abdalla Position: Head of Electrical Engineering Program Date : 25 May 2016	Name: Dr. Mujahed Al- Dhaifallah Position: Dean Date : 25 May 2016