

Course Information	
Course title	Engineering Mathematics 2
Semester	109-2
Designated for	DEPARTMENT OF CIVIL ENGINEERING
Instructor	FU-SHU JENG
Curriculum Number	CIE1016
Curriculum Identity Number	501 12020
Class	01
Credits	2.0
Full/Half Yr.	Half
Required/ Elective	Required
Time	Tuesday 6,7(13:20~15:10)
Remarks	Restriction: freshmen AND Restriction: within this department (including students taking minor and dual degree program) The upper limit of the number of students: 40.
Ceiba Web Server	http://ceiba.ntu.edu.tw/1092CIE1016_01
Course introduction video	
Table of Core Capabilities and Curriculum Planning	Table of Core Capabilities and Curriculum Planning
Course Syllabus	
Please respect the intellectual property rights of others and do not copy any of the course information without permission	
Course Description	To study the physical nature of engineering problems, Mathematics is a good tool, which formulates the problems studied in terms of differential equations, i.e. Governing Equations, and by solving the D.E., we can have a insight look of the properties of the problem and find solutions accordingly.
Course Objective	To enable the students to solve Differential Equations, including ODE and PDE. The methods taught include analytical methods, series solutions, Laplace transform and Fourier transform.
Course Requirement	3 exams 35 % each, home work 15 %, Questions In Class (QIC) & quiz 15 %
Office Hours	
References	<ol style="list-style-type: none"> 1. Zill and Gullen, 2006. Advanced Engineering Mathematics, 3rd Ed. Johes and Bartlett Publishers. 2. Rahman, 1991. Applied Differential Equations for Scientists and Engineers, Vol. 2, Partial Differential Equations. Computational Mechanics Publications. 3. Pinchover and Rubinstein, 2005. An Introduction to Partial Differential Equations. Cambridge University Press. 4. O'Neil, 1991. Advanced Engineering Mathematics. Wadsworth. 5. Grossman and Derrick, 1988. Advanced Engineering Mathematics. Harper Collings.
Designated reading	<ol style="list-style-type: none"> 1. Lecture notes 2. Jeffrey, 2002. Advanced Engineering Mathematics. Harcourt/Academic Press. 3. Kreyszig, 2011. Advanced Engineering Mathematics, 10th Ed. Wiley.
Grading	

No.	Item	%	Explanations for the conditions
1.	QIC (questions in class)	15%	
2.	Home works	15%	
3.	Exam 2	35%	
4.	Exam 1	35%	

Progress

Week	Date	Topic
Week 1	02/23	Course introduction 1 Ch.1 1st order ODE 1
Week 2	03/02	Ch.1 1st order ODE 2
Week 3	03/09	Ch 2 2nd order ODE 2
Week 4	03/16	Ch 2 2nd order ODE 1 Ch 3 Higher order ODE 1
Week 5	03/23	Ch 3 Higher order ODE 2
Week 6	03/30	Ch 4 System ODE 2
Week 7	04/06	Spring break
Week 8	04/13	Exam 1 (Ch. 1~4)
Week 9	04/20	Ch 5 Power series 2
Week 10	04/27	Ch 5 Power series 2
Week 11	05/04	Ch 5 Power series 2
Week 12	05/11	Ch 5 Power series 2
Week 13	05/18	Ch 6 Laplace Transform 2
Week 14	05/25	Ch 6 Laplace Transform 2
Week 15	06/01	Ch 6 Laplace Transform 2
Week 16	06/08	Exam 2 (Ch. 5~6)
Week 17		No class