



Philadelphia University
Communication Engineering Department

Course Title: *Engineering Analysis (1) (650201) - Section 2*

Instructor: *Dr. Mohammed Mahdi*

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Semester: *2011-2012/1*

Class Time: *11:15-12:45 (6718)*

Prerequisite: *Engineering Mathematics (210206)*

Office Hours: *12:45-13:45*

Office Number: *709*

Text Book: *Advanced Engineering Mathematics By: Erwin Kreyszig 8th edition 1999.*

Course Goals:

Differential equations are an excellent vehicle for displaying the interrelations between mathematics and the physical sciences. The student can see ways in which the solutions to specific problems have benefited from work of a more abstract nature.

Objectives:

At Completing this module the student should be able to :

- *Solve first order differential equations.*
- *Solve second order linear differential equations.*
- *Solve higher order differential equations.*
- *Apply series solution to differential equations.*
- *Use Laplace Transform to solve differential equations.*

Course Contents

	<u>Week</u>
❖ <i>Basic Concepts and Ideas.</i>	2 nd October
❖ <i>First order differential equations.</i>	9 th October
❖ <i>Second order differential equations.</i>	23 rd October 6 th November
❖ Quiz 1	
❖ First Exam Period	6 th – 14 th Nov
❖ <i>Higher order differential equations.</i>	20 th November
❖ <i>Laplace Transform</i>	27 th November
❖ <i>Power Series Method.</i>	18 th December
❖ Quiz 2	
❖ Second Exam Period	22 nd -30 th Dec.
❖ Deadline for DROPPING courses	5 th Jan.
❖ Quiz 3	
❖ <i>Introduction to Partial Differential Equations.</i>	8 th January
❖ Final Exams period	15 th -24 th Jan

Mode of Assessment

1- First Exam	20%
2- Second Exam	20%
3- Quizzes	15%
4- Performance	5%
5- Final Exam	40%

References

- 1- *Boyce, William E., DiPrima, Richard C., Elementary Differential Equations, Fifth Edition, Wiley, New York, 1992.*
- 2- *Rabenstein, Albert L., Elementary Differential Equations With Linear Algebra, Third Edition, Academic Press, New York, 1982.*
- 3- www.sosmath.com/diffeq/diffeq.html
- 4- www.aw-bc.com/ide