

**ChE 626: Mathematical Methods in Chemical Engineering
Fall 2017**

Instructor: Dr. Ezinwa Elele

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Office hours: Wednesday 3:00 p.m. – 4:00 p.m. or individual appointment

Time & Place of Class: Tuesday 6:00 pm – 9:05 pm, CKB 124

Course Prerequisites: MATH 222 or equivalent undergraduate degree in Chemical Engineering

Course Description: The purpose of the course is to emphasize the importance of mathematics to chemical engineering practice.

Textbook: Applied Mathematical Method for Chemical Engineers (3rd Edition) by Norman W. Loney.

#	Date	Topic
1	Sept 5	Differential Equations – Basic Concepts
2	Sept 12	Separable First-Order Differential Equations; Exact First-Order Differential Equations
3	Sept 19	Applications of First-Order Differential Equations
4	Sept 26	Second-Order Linear Homogeneous Differential Equations with Constant Coefficients
5	Oct 3	The Method of Undetermined Coefficients Method of Variation of Parameters
6	Oct 10	Laplace Transforms to Solve Linear Differential Equations
7	Oct 17	Applications of Second-Order Linear Differential Equations
8	Oct 24	Midterm Examination
9	Oct 31	Sturm-Liouville Problems
10	Nov 7	Fourier Series and Integrals
11	Nov 14	Partial Differential Equations and Method of Separation of Variables Project Assignment
12	Nov 21	No Class - Thursday Classes Meet
13	Nov 28	Partial Differential Equations and Method of Separation of Variables
14	Dec 5	Laplace Transforms to Solve Partial Differential Equations Project Assignment Due
15	Dec 12	Applications of Partial Differential Equations

Grading schemes:

Homework-In-class Activities	15%
Midterm Examination	30%
Project Assignment	20%
Final Examination	35%

Final Exam: TBA

The NJIT Honor Code and standards of *academic integrity* will be enforced in this course. Any violation will be brought to the immediate attention of the Dean of Students.