Fall 2022 MATH-204 DE & Laplace Transforms
(15014; Section 2; 11:20~12:20 MTRF @ AB 2-716)

Instructor: Dr. Hee Seok Nam **Office:** AB 2-135B
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Office Hours: 10:10~11:10 pm MTRF, or other times by appointment

Prerequisite: MATH-203 or MATH-203H

Required Materials:
- Differential Equations with Boundary-Value Problems, 9th Ed., Dennis G. Zill ISBN #978-1-305-96579-9 (electronic copy included with WebAssign)
- WebAssign with class key: **kettering 6037 4809**

Catalog Description:
An introduction to the principles and methods for solving first order, first degree differential equations, and higher order linear differential equations. Includes a study of the Laplace transform and its application to the solution of differential equations. Existence and uniqueness theorems for O.D.E.'s are also discussed.

Course Websites:
This course is assisted by Blackboard (https://kettering.blackboard.com/). All course-related materials will be posted there. In addition, we use WebAssign as a homework management system. You will need to purchase an access code if you don't have one yet while the above class key is needed to locate our course.

Point Allocation:

WebAssign Assignments	$22 \times 7 = 154$ pts
3 Midterm exams	$100 \times 3 = 300$ pts
Final exam	150 pts
Other activities	100 pts
Attendance	30 pts
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Total	**734 pts**

Assignments:
After each section, HW problems will be assigned through WebAssign which will be due by the corresponding midterm date.

Exams:
There are three midterms and a comprehensive final test.

Other Activities:
This category may include quizzes, in-class participation and other possible learning activities.

Attendance:
Attendance is very important to catch up classes and hence mandatory. If you miss class, it is YOUR responsibility to find out what was covered during the lecture(s) you missed and what we will be doing when you get back.

Grading Scale:

A	A–	B+	B	B–	C+	C	C–	D+	D
≥ 94%	≥ 90%	≥ 87%	≥ 84%	≥ 80%	≥ 77%	≥ 74%	≥ 70%	≥ 65%	≥ 60%

A grade of F will be given for the overall performance below 60%.

Cheating
Cheating is not tolerated! Please, do not even try to do this. Cheating will result in an automatic failure of the course and reporting the case to a Judicial Board, or University Board of Student Conduct (UBSC).

Make-ups and late works
Not accepted without a valid reason approved by the instructor in advance.

Policy changes
The instructor reserves the right to make any academically necessary changes.

Official E-Mail Address
Your Kettering University e-mail address will represent you in the cyber space. It will be the official address used by the university relaying important messages regarding academic and financial information and the University will consider this your official notification for important information. It will also be used by your instructors to provide specific course information.

University Policy Syllabus
Uploaded to the course's Blackboard site under the left-hand navigation item "syllabus and Course Introduction".

COVERED TOPICS AND SUGGESTED SCHEDULE

Week	Section	Topic
1 1/9,10,12,13	1.1 1.2 1.3 2.1	Definitions and Terminology Initial-Value Problems (IVPs) DE's as Math. Models Solution Curves without Solutions
2 1/17,19,20	2.2 2.3 2.4	Separable Equations Linear Equations Exact Equations
3 1/23,24,26,27	2.4 2.5 2.6 3.1	Exact Equations Solutions by Substitution A Numerical Method Linear Models
4 1/30,31,2/2,3	 4.1	M1 Review M1 IVPs and Boundary-Value Problems
5 2/6,7,9,10	4.1 4.2 4.3	IVPs and Boundary-Value Problems Reduction of Order Linear Eq. with Const. Coeff.
6 2/13,14,16,17	4.4 4.6 5.1	Undetermined Coefficients Variation of Parameters Spring/Mass Systems
7 2/20,21,23,24	5.1 7.1	Spring/Mass Systems M2 Review M2 Definition of the Laplace Transform
8 2/27,28,3/2,3	7.2 7.3	Inverse Laplace Transforms and Transforms of Derivatives Operational Properties I: Translation on the t-Axis and s-Axis
9 3/6,7,9,10	7.4 7.5	Operational Properties II: Derivatives of a Transform, Transforms of integrals, periodic function The Dirac Delta Function
10 3/13,14,16,17	7.5 7.6	The Dirac Delta Function Systems of Linear Differential Equations M3 Review M3
11 3/20,21		Final exam review