

Course Number and Name MTH304 - Differential Equations

MTH 304

Class Time and Location Online

Credits and Contact Hours 3 Credits

Semester Summer 2021

INSTRUCTOR

Name: Rony Touma

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Course Page: Blackboard

Office: Orme Gray 414

Office Hours: TW: 16:30-17:30.

CURRENT CATALOG DESCRIPTION

This course covers the topics of first order differential equations and applications, linear higher order differential equations and applications, systems of linear differential equations, series solutions of differential equations and solutions, and Laplace transforms.

COURSE PREREQUISITE/CO-REQUISITE

Prerequisite: MTH201 Calculus III

TEXTBOOK AND REFERENCES

Elementary Differential Equations, 10th edition, by William Boyce, Richard DiPirma

COURSE TYPE

Required

☐

Elective

☒

Selective Elective

☐

COURSE LEARNING OUTCOMES

CLO1. Model and solve problems leading to first-order differential equations.

CLO2. Use symbolic methods to solve second order linear differential equations, and first order linear systems of differential equations.

CLO3. Compute Laplace transforms and inverse Laplace transforms, and to apply these to solve differential equations.

CLO4. Use direction fields and phase portraits to qualitatively analyze the solutions to differential equations

STUDENT OUTCOMES ADDRESSED IN THIS COURSE

1. Draw direction fields of a 1st Order Differential Equation.
2. Solve separable, exact and Linear Differential Equations.
3. Model and solve physical phenomena using differential equations.
4. Solve 2nd order Linear Differential Equations.
5. Solve linear systems of differential equations, draw their phase portraits, and determine the type and stability of their critical points.
6. Find Laplace Transforms and Inverse Laplace Transforms.
7. Solve IVP using Laplace transforms.
8. Use power series to solve linear differential equations.
9. Use Euler's method and Improved-Euler's method for finding the numerical solution of an IVP.

COURSE GRADING AND PERFORMANCE CRITERIA

Exam 1: Saturday June 19 @ 08:30 am	65%
Exam 2: Saturday July 03 @ 08:30 am	
Final exam (cumulative)	35 %

Guidelines for the Grading System:

Grade	Quality Points	Guidelines over 100
A	4	≥ 90
A-	3.67	87 – 89
B+	3.33	83 – 86
B	3.0	80 – 82
B-	2.67	77 – 79
C+	2.33	73 – 76
C	2	70 – 72
C-	1.67	67 – 69
D+	1.33	63 – 66
D	1	60 – 62
F	0	≤ 59
P	No quality Points	
NP	No quality Points	
U	No quality Points	
W	No quality Points	
I	No quality Points	

TOPICS COVERED IN THE COURSE

Topics	Sections
General Introduction and First Order Linear Equations	1.1-1.2; 2.1-2.8
Second Order Linear Equations	3.1-3.6
Higher Order Equations	4.1, 4.2
Series Solutions of Second Order Equations	5.1, 5.2
The Laplace Transform	6.1-6.4
Systems of first order linear equations	7.1-7.4 & 7.5-7.6

POLICY ON CHEATING AND PLAGIARISM

Please refer to the Student Code of Conduct, particularly Appendix B.

http://www.lau.edu.lb/about/governance-policies/policies/student_code_of_conduct.pdf

ATTENDANCE POLICY

1. Students are held responsible for all the material presented in the classroom, even during their absence.
2. Students can miss no more than the equivalent of five weeks of instruction and still receive credit for that course.
3. Instructors have the right to impose specific attendance regulations in their courses, provided that the above-stated limit of absences is not exceeded, and the minimum number of absences allowed is no fewer than the equivalent of two weeks of classroom instruction, after the Drop and Add period.
4. Instructors will inform the Departments Chairperson and the Guidance Office, of any prolonged unexplained absence.
5. Students who exceed the allowed number of absences must withdraw from the course; otherwise, the course grade will be recorded as "F" (NP).

WITHDRAWAL POLICY

1. A student who withdraws after the Drop/Add period and by the end of the 5th week of classes (10th day of classes for Summer Modules) will obtain a "WI" on that particular course. The student may process such request directly through the Registrar's Office.

The deadline for WI is June 23rd, 2021.

2. A student who withdraws from a course between the 6th week and the end of the 10th week of classes (18th day of classes for Summer Modules) will receive either a "WP" or a "WF". "WP" or "WF" will be determined by the instructor based on the achieved academic performance in that course till the time of withdrawal.



The deadline for WP/WF is July 5th, 2021.

3. The "WI" and the "WP" will not count as a Repeat; whereas the "WF" will count as a Repeat.
4. "WI", "WP" and "WF" will not count towards the GPA calculation.
 - WI is equivalent to Early Withdrawal
 - WP is equivalent to Withdrawal/Pass
 - WF is equivalent to Withdrawal/Fail

COURSE EVALUATION

In order to improve the effectiveness of the educational process, all students are expected to submit their course evaluations by the last day of classes.

Students who fail to complete the evaluation of ALL registered courses by the set deadline:

1. will not be able to access their course grades from Banner or Portal until two weeks after the end of the final exams period; and
2. will not be able to request transcripts.

The anonymity of the process and the students will be maintained at all times

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Student Code of Conduct - Academic Violations

The following table defines the sanction(s) associated with each violation. In some cases and when the violation is too general, a range of sanctions is set for the pertinent committee to choose from depending on the specifics of each case. As for the second offense, the set sanctions apply regardless whether the violation has taken place in the same course or a different one, within the same semester or not.

Code #	Violation	First Offense	Second Offense
Cheating			
2.2.1	Using material or equipment (including mobile phones, electronic tablets, i-pads, calculators, and other devices) that is not authorized by the instructor in an examination, project, or graded assignment	zero on the deliverable with a warning	F on the course with a warning
2.2.2	Cheating, copying, collaborating with or aiding another Student in a manner not permitted by the instructor on an examination, project, or other graded assignment	zero on the deliverable with a warning	suspension
2.2.3	Distributing or aiding in the distribution of previous exams without authorization of the instructor	double warning – suspension	suspension – expulsion
2.2.4	Stealing, reproducing, or circulating an examination or other graded assignment before it has been administered	suspension	expulsion
2.2.5	Impersonating another Student or allowing another Student to impersonate one's self during an examination, presentation, or other graded assignment	suspension for both	expulsion
2.2.6	Impersonating an assistant, staff member, or faculty member for the purpose of (a) proctoring examinations without authorization or permission or (b) obtaining confidential information regarding coursework or examinations	suspension – expulsion	expulsion
2.2.7	Receiving, purchasing or selling a project, paper, or any academic document and presenting it as work other than that of the author	suspension – expulsion	expulsion
2.2.8	Submitting identical papers or coursework for credit in more than one class without the permission of the instructor	zero on the deliverable with a warning	F on the course with a warning
Plagiarism and Copyright Violations			
2.2.9	Failing to attribute language or ideas to their original source by not crediting the original author with an appropriate acknowledgement or citation	zero on the deliverable with a warning	F on the course with a warning
2.2.10	Using photocopied or electronic copies of textbooks, compact disks, films, music, online course materials, and other content beyond the fair use policy within University Premises	warning	double warning
2.2.11	Using copyrighted materials, including in written research reports and papers, without obtaining required permission, if any, from the rights holder	warning	double warning
Unauthorized Sale, Distribution, or Use of Course Materials			
2.2.12	Recording any lecture or presentation for personal use or public distribution without the prior consent of the course instructor. This applies to the unauthorized use of any medium including but not limited to mobile phones, electronic tablets, i-pads recorders, films, and other devices	warning	double warning
2.2.13	Selling academic materials by any Student, club, or group.	warning	double warning



Code #	Violation	First Offense	Second Offense
	This includes but is not limited to lectures, course recordings, class notes, and previous exams		

