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## COURSE SYLLABUS

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<b>Course Name:</b>	Partial Differential Equations — MAP 6356
<b>Instructor:</b>	Prof. Eduardo Teixeira
<b>Instructor's contact information:</b>	Eduardo.Teixeira@ucf.edu (407) 823-5987 <a href="https://sciences.ucf.edu/math/eteixeira/">https://sciences.ucf.edu/math/eteixeira/</a>
<b>Class Meeting:</b>	MW 2:00 PM— 3:20 PM in BA1 207
<b>Office Hours:</b>	MW 3:30 PM — 5:30 PM in MSB 302
<b>Textbook:</b>	Partial Differential Equations. AMS Graduate Studies in Mathematics, Vol. 19, by <i>Lawrence C. Evans</i>

**Course Description:** This is an introductory course on the theory of Partial Differential Equations (PDE) and their applications. The course will offer a comprehensive survey of modern techniques in the theoretical study of PDE, including Transport Equation, Laplace's Equation, Heat Equation, Wave Equation and nonlinear first order PDE.

**Pre-requisites:** MAP 4364 or MAP 5435 or equivalent. While this course is introductory, its contents introduce advanced mathematical concepts. Thus, previous experience with mathematical analysis, reasoning and proofs is strongly recommended.

**Topics:** Transport Equation: initial-value problem, non-homogeneous equation; Laplace's Equation: fundamental solution, mean value theorem, properties of harmonic functions, Green's function, energy methods; Heat Equation: fundamental solution, mean value formula, properties of solutions, energy methods Wave Equation: solution by spherical means, non-homogeneous problem, energy methods; nonlinear first order PDE: complete integrals, characteristics, Hamilton-Jacobi Equation, conservation laws.

**Tests and Homework:** There will be three partial exams, which combined will comprise 40% of final grade, and one comprehensive final exam (40%). Taking the final exam is mandatory for all students enrolled in the class. Formula sheets and calculators are not allowed on the tests. Homework problems and reading assignments will be posted weekly and combined will comprise 20% of final grade

**Grading scale:** The following Letter Grades will assigned

90 — 100 A; 80 — 89 B; 70 — 79 C; 60 — 69 D; 0 — 59 F.

**Attendance Policy:** Students are expected to attend all classes, unless a justified reason for acceptable absence is provided, which includes: serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligations, severe weather conditions, and religious holidays.

**Make-up Policy:** Make-up tests will only be given upon prior arrangement with the instructor. Students must meet the criteria established in University policy for those students who are absent while representing the University.

**Disability Policy:** Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester and must be registered with Student Disability Services (Student Resource Center, room 132, phone 407-823-2371, TTY/TDD only phone 407-823-2116) before requesting accommodations.

**Important dates:**

- ◆ Class Begins: Monday, August 21, 2017.
- ◆ Late Registration: Monday, August 21, 2017 — Friday, August 25, 2017.
- ◆ Drop/Swap Deadline: Thursday, August 24, 2017 11:59 PM.
- ◆ Withdrawal Deadline: Monday, October 30, 2017 11:59 PM.
- ◆ Last day of class: Wednesday, November 29th.
- ◆ Final Exam: Wednesday, December 6, 2017, 1:00 PM – 3:50 PM

**Disclaimer:** This document is subject to retroactive change. Should the instructor decide to modify any portion of the present syllabus, changes will be announced in class and a replacing document will be published in the Webcourse@UCF platform. Final interpretation of the syllabus is reserved solely to the course instructor.