PHZ3113, Section 001, Mathematical Methods in Physics (Fall 2019)
Instructor: Dr. Inna Ponomareva; Office: ISA 5103; E-mail: iponomar@usf.edu; telephone: 974-7286
Text: Mathematical Methods in the Physical Sciences, 3rd ed; Publisher: Wiley; Author: M.L. Boas
Class: TR 12:30pm-1:45pm ISA 2051
Problem-solving class: F 10:45am-12:00pm ISA 2051
Office Hours: TR 2:00pm-3:00pm and by appointment.

Course Outline and Objectives
The course is designed to develop the basic mathematical skills required to proceed as majors in physics at the undergraduate level. Strong emphasis will be on the fundamentals, and the particular topics will include power series, differentiation, matrices, multiple integrals, ordinary and partial differential equations, and vector analysis. The skills learned in this course will be used in subsequent courses in physics as well as to form the basis for a fundamental understanding of the mathematics needed in physics. The main ideas are understood and re-enforced by developing conceptual problem-solving skills. This is important in understanding the material, and success in the course; therefore, problems will be assigned from each chapter of the text. I will also include illustrative problems that represent a fundamental understanding of the material as applied to physics. After we complete each chapter in the text, I will ask for five of the assigned problems from that chapter to be handed in. These problems will be due at the beginning of the first lecture of the next chapter. In addition, there will be a quiz after each chapter that emphasizes basic concepts of the material learned. I will give exact dates for these quizzes about one week in advance. In studying for the quizzes and examinations you are encouraged to work on problems in the book in addition to those assigned. Please read the text before each lecture. Although I will not require attendance, it is paramount that you come to every lecture in order to keep up with the work. Please come see me during office hours if you have missed a lecture to get 'up to speed' on the course work.

Course Grading Breakout

Assigned Problems	20 %	
Quizzes	20 %	(best 5 out of 7 quizzes)
Mid-term Exam	30 %	
Final	30 %	
Extra points will be offered for attendance*		

* To qualify for extra credit for attendance students must attend 22 out of 27 classes excluding Midterm and 10 out of 13 problem-solving classes on Friday. The extra credit will be in the form of grade increment. For example, if student earns B+ and qualifies for extra credit, the final grade will be A-. Another example, if student earns A- and qualifies for extra credit, the final grade will be A.

Course Grading

93.00 – 100.00	A
90.00 – 92.99	A-
87.00 – 89.99	B+
83.00 – 86.99	B
80.00 – 82.99	B-
77.00 – 79.99	C+
73.00 – 76.99	C
70.00 – 72.99	C-
67.00 – 69.99	D+
63.00 – 66.99	D
60.00 – 62.99	D-
< 59.99	F

Tentative Schedule and Examination Dates

Week Beginning	Topics (Chapters in Text)
Aug 25	Infinite series, power series (1)
Sept 1	
Sept 8	Linear Algebra (3)
Sept 15	
Sept 22	Partial Differentiation (4)
Sept 29	
Oct 6	Multiple Integrals (5)
Oct 13	Mid-term on Chapters 1, 3, 4 & 5 + Ch. 5 Quiz on Thurs Oct 17
Oct 20	Vector Analysis (6)
Oct 27	
Nov 3	Ordinary Differential Equations (8)
Nov 10	
Nov 17	Partial Differential Equations (13)
Nov 24	
Dec 1	
Dec 8	FINAL on Chapters 6, 8, 13 + Ch. 13 Quiz on Thursday Dec 12 10:00 AM – 12:00 Noon

NOTE

Students who anticipate being absent from exams due to a major religious observance must provide notice of the date(s) and event(s) to the instructor, in writing, by the second class meeting. Notes and Tapes are not permitted for purposes of sale.

Any student with a disability is encouraged to meet with me privately during the first week of class to discuss accommodations. Each student must bring a current Memorandum of Accommodations from the Office of Student Disability Services (974-4309, SVC1133) which is prerequisite for receiving accommodations. Accommodated examinations through the Office of Student Disability Services require at least two weeks notice.