

## Math 245 – Mathematics of Physics & Engineering I

**Lecture:** MWF: 9:00 a.m. GFS 116 (class # 39601D)  
**Discussion:** TuTh 2:00, 3:00 THH B10  
**Instructor:** Dr. Ramtin Sheikhhassani  
**Office:** VHE 418  
**Contact Info:** [sheikhha@usc.edu](mailto:sheikhha@usc.edu) ; (818) 396-6626  
**Office Hours:** MWF, 10-11AM, VHE 418 or by appointment

**Text:** Differential Equations by J.R. Brannan & W.E. Boyce (Wiley 2015); 3rd Edition

### Course Content:

Ch. 1 Introduction & First Order ODEs Section: 1.1 – 1.3  
 Ch. 2 First Order ODEs . Sections: 2.2 – 2.4  
 Ch. 4 Second Order Linear ODEs. Sections: 4.1 – 4.7  
 Ch. 5 The Laplace Transform Sections: 5.1 – 5.9  
 Ch. 3 Systems of Two First Order ODEs. Sections: 3.1 – 3.6  
 Ch. 7 Nonlinear ODEs. and Stability Sections: 7.1 – 7.5  
 Ch. 2 First Order Nonlinear ODEs Sections: 2.1 & 2.6

### Grading Plan

Assignments	15 %	(Selected problems)
Home Work Quizzes	20 %	(Quizzes based on assigned HW)
Mid-Term Exams	40 %	(Exams based on lectures + HW)
Final Exam	25 %	(Comprehensive Exam)

Homework Quizzes: Weekly quizzes will be conducted in the discussion sessions, with problems extracted from assigned homework (or similar problems).  
 There will be at least 10 HW Quizzes, and **NO “make-up”** of any of the quizzes will be offered.

Mid-Term Exams: Two mid-term exams will be scheduled at somewhat even intervals during the semester. These exams will cover typical problems arising from either the lectures, the assigned homework, or the HW Quizzes.

**MT#1 on Monday, February 12,**  
**MT#2 on Monday, March 26**

Final Exam: The final exam is comprehensive and will be held at the time specified in the University Schedule of Classes:

**Final on Friday (8-10 a.m.) May 4**

Three review sessions will be conducted prior to each test and the final exam, time and place for the review classes will be announced accordingly.

**Teaching Assistants:** Tianyou Wang  
**Contact:** [tianyouw@usc.edu](mailto:tianyouw@usc.edu)  
**Office Hours:** To be announced in Discussion Sections by TA.

**Remarks:**

Some topics in class will be handled very differently from the book. You will be responsible for the way things are done in class. Class attendance is strongly encouraged. Cellphones, laptops, tablets and anything else electronic are to be turned off during class.

Final grade will depend entirely on the performance on the above components, and be independent of the financial support requirements (e.g., minimum grade requirement for tuition reimbursement). Please schedule your work-related travel during time periods outside of the mid-term and final exams. Accommodation to take exams on different dates will be made for only family emergencies, religious observance and documented illness or health-related emergencies.

**Statement for Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

**Statement on Academic Integrity**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect ones own academic work from misuse by others as well as to avoid using anothers work as ones own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.