

SYLLABUS
Math 445: Spring 2021

Instructor: Prof. Nabil Ziane

Office: KAP 444A

Phone: 213-740-3766

Email: ziane@usc.edu

Lecture hours and location: MWF, 1:00 – 1:50 pm, Online (zoom)

Office hours: MWF 12:00 – 12:50 pm or by appointment, Online (zoom)

TA: Tianyou Wang

Email: tianyouw@usc.edu

TA Discussion hours and location: Section 39666R 4:00-4:50pm and 39667R: 5:00-5:50pm (Online)

TA's office hours: TBD

Course Description: The course is a natural continuation of Math 245, covering some of the fundamental tools of Applied Mathematics, Physics and Engineering. It starts with the main concepts and theorems from Vector Calculus (familiar to those who have taken Math 226 previously), followed by the fundamentals of Complex Analysis. Next, the Fourier series and transform are introduced as an important tool for the analysis of Partial Differential Equations, which is the next topic of the course. The last two weeks will be devoted to the study of power series methods for ODEs and their application to some relevant equations often arising in applications (Bessel's, Legendre's, etc.)

Textbook: E. Kreyszig. *Advanced Engineering Mathematics*, 10th Ed. Wiley, 2011.

Important dates:

Midterm 1: Friday February 26, 2021, Online.

Midterm 2: Friday, April 9th, 2021, Online.

Last day to drop the class without a mark of W: February 5th

Last day to drop the class with a mark of W: April 30th

Last class: Friday, April 30th

Final Exam: Wednesday, May 5th, 2-4pm. Online

Course schedule:

A tentative (approximate) week by week schedule of lectures is given in the table below.

Week 1	Chapter 9
Weeks 2 and 3	Chapter 10
Weeks 4 and 5	Chapter 11
Weeks 5 and 7	Chapter 12
Week 8	Chapter 5
Week 9	Chapter 13
Week 10	Chapter 14
Week 11	Chapter 15
Week 12	Chapter 16
Week 13	Chapter 21

Recordings of Lectures: All lectures will be recorded on zoom and posted on Blackboard.

Catastrophic internet failure: In the unfortunate event that my internet cuts down (say for 5+ minute) and I am unable to resume the lecture I will separately record the full lecture and upload it to blackboard.

Grading:

Homework will be assigned at the end of each week. Working on the homework is key to succeed on quizzes/midterms/final and should be attempted right after the corresponding material is covered in the lecture.

Quizzes will be given in discussion sessions every week.

There will be two midterm exams (50 min. each) during lectures and one final exam (2h).

All exams and quizzes are **closed-book** and **closed-notes**.

As a rule, **there will be no make-up exams or quizzes** unless special documented circumstances are presented to the instructor.

Grade distribution:

Quizzes and Homework = 30%. The lowest two grades will be dropped.

Each midterm = 20%

Final Exam = 30%

If there is a scheduling conflict for an exam, you must let ME (NOT the TA) at least 2 weeks before the examination. A scheduling conflict must involve an activity sponsored and approved by USC (marching band, athlete event, etc.) In particular, the university club or organization in question must send an official request, with the Dean's approval, to all faculty.

Policy on academic dishonesty: Don't cheat. If you have questions about what constitutes "cheating", or what will happen if you are caught, please review the Trojan Integrity Guide, the Undergraduate Guide for Avoiding Plagiarism, or the General USC Policies.

Curving:

Individual exams and quizzes will not be curved, except in the rare case of a typo or error that makes a question unsolvable. At the end of the course, it is possible that final letter grades may be adjusted to reflect the final distribution of the scores in the class. Such a curve would always be in your favor, else the standard 10-point interval from the raw score would apply. However, no one will know if such a curve is necessary, or what the curve would be, until all grades are in and all drops are made.

Grading disputes: If you feel that a mistake was made in grading your homework, quizzes or exams or that these scores have been incorrectly recorded in Blackboard, bring it to my within 10 days of the due date of the home- work/quiz/exam. Any complaints received later will not be considered.

Students Requiring Special Accommodations: Any student requesting academic accommodations based on special needs is required to register with DSP each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to the TA) 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. Email:

ability@usc.edu, Website and contact information for DSP:

http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html

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 one's own academic work from misuse by others as well as to avoid using another's work as one's 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/>.

Other comments:

Official announcements, homework assignments, grades, etc. will be posted on Blackboard. You are expected to **check Blackboard on a regular basis**.

Do not hesitate to ask questions. Walk-ins (on zoom) are welcome during office hours, and you can also make appointments to see me at other time. Your TA is also ready to help you.

Here is a link to the Math Center if you need further information:
<https://dornsife.usc.edu/mathcenter>