

AEP 4210: MATHEMATICAL PHYSICS I (FALL 2019)

COURSE DESCRIPTION: Review of vector analysis; complex variable theory, Cauchy-Riemann conditions, complex Taylor and Laurent series, Cauchy integral formula and residue techniques, conformal mapping; Fourier Series; Fourier and Laplace transforms; ordinary differential equations; separation of variables.

MEETING TIME/SPACE: Monday through Thursday, 12:20–1:10pm, 115 Rockefeller Hall

INSTRUCTOR: Brian Hwang (bwh59)

OFFICE HOURS: After classes, and Wednesdays, 3:00pm–4:00pm in Clark 247, or by appointment.

TA: Yishai Eisenberg (ye44)

TA OFFICE HOURS: Tuesdays and Thursdays, 4:00–6:00pm in Clark 218.

TEXTBOOK: *Mathematical Physics: Applied Mathematics for Scientists and Engineers* by Bruce Kusse and Erik Westwig (2nd edition, 2007).

The text in the second edition of the book is the same as the first, and the latter seems to be cheaper and more widely available on the used book market. I'll make available the pages of errata, which are the only difference between the two editions.

COURSE WEBSITE: <http://pi.math.cornell.edu/~bhwang/4210/>

PREREQUISITES: MATH 2930. Also, it is strongly recommended that you have completed common course curriculum mathematics and physics courses.

GRADE BREAKDOWN:

- 20% Homework
- 25% Exam 1 (Tuesday, October 8, 7:30pm)
- 25% Exam 2 (Tuesday, November 19, 7:30pm)
- 30% Final Exam (Wednesday, December 18, 7:00pm)

Homework will be assigned weekly and collected each Friday at 12:20pm from the AEP 4210 homework boxes on the second floor of Clark Hall. You are encouraged to collaborate with others on assignments, but each student *must write up solutions on their own, in their own words* and list their collaborators on the first page of their submitted homework. Each student is expected to abide by the Cornell University Code of Academic Integrity.

POLICIES: No late homework will be accepted without a note from the Health Center or the Dean's Office. However, in calculating final grades, we will drop the lowest homework score.

There are no make-up exams. If exceptional circumstances arise, let me know as soon as possible so that we can make the proper arrangements. You will need to provide a letter from the dean.