AMAT587  An Introduction to Math Physics (Fall, 2021)

Textbook: Electricity and magnetism for mathematicians, by Thomas A. Garrity

Instructor: Dr. Ron Yang,
Office Hours: TBD
Contact: phone: 2-4640; email: ryang@albany.edu

Course Objectives: This course is designed for senior undergraduates and graduate students who are interested in some basic concepts and methods in math physics. Topics include Maxwell’s equations, special relativity, Lagrangian, calculus of variation, differential forms, Hodge $\star$ operator, Hilbert space and Hermitian operators, harmonic oscillator, vector bundles and connections, Yang-Mills equations.

Homework: A minimum amount of homework will be assigned at each class and will be collected for grading.

Tests: There will be a midterm exam and a final exam. Both are take-home and open book. Dates will be scheduled later. 80% of the test problems will be of homework-type while the other 20% may be more challenging. There is no make up test, those with difficulties should make arrangement for an early test.


Classroom Manners: Arrive before class starts, leave after class. Attendance will be checked from time to time and will affect grade. Special cases need permission from professor. Turn off cell phone during class. Cheating on quizzes or exams is strictly forbidden. Please read academic integrity regulations at http://www.albany.edu/undergraduate_bulletin/regulations.html.