Syllabus for PDE for Engineers 3150-001 Spring 2022

Instructor: Trung Chau  
Email: chau@math.utah.edu  
Lecture When and Where: M,W,F, 10:45 AM-11:35 AM, BEH S 114  
Course website: check the Canvas course page in your CIS  
Instructor Office + Office Hours: JWB 115, TTh 12pm-1pm  
Final Exam time & place: Final Examination will be given during the last class period in the regularly scheduled classroom.

This course will cover the basic theory of partial differential equations and applications to engineering and scientific problems. The core material includes Fourier series and boundary-value problems for the wave, heat, and Laplace equations, separation of variables in rectangular and radial geometries, Fourier transform, but more will be included. For a 2 credit hour class, this class will be very demanding. Students should expect a lot of homework problems and hard exams. The lecture class will incorporate instructor lectures, including applications of PDE Engineering, some group problem solving sessions, daily assigned homework, random pop quizzes. Other important resources are yourselves—form study groups!—and the Math-Department tutoring lab (room 155 of the T. Benny Rushing Mathematics Center (in the basement connector between the LCB and JWB math buildings).

- Homework problems from the text will be posted on Canvas every week. Homework will need to be submitted on Gradescope the next Monday. No late homework will be accepted.
- Three mid-term exams, each 50-minute long, and one 2-hour comprehensive final exam.
- Practice exams will be posted about a week prior to each exam. Practice exams will be similar in structure and format to the real exam. Exam policy: No calculators, computers, phones, or notes are allowed during the exam.
- Grades are computed as a weighted average comprising 15% homework scores, 55% midterm exam score, and 30% the final exam score.
- Letter grades are determined as follows: If X is your percentage grade, then \( \{ X \geq 93\% \Rightarrow A, X \geq 90\% \Rightarrow A-, X \geq 87\% \Rightarrow B+, X \geq 83\% \Rightarrow B, X \geq 80\% \Rightarrow B-, X \geq 77\% \Rightarrow C+, X \geq 73\% \Rightarrow C, X \geq 70\% \Rightarrow C-, X \geq 67\% \Rightarrow D+, X \geq 63\% \Rightarrow D, X \geq 60\% \Rightarrow D-, X < 60\% \Rightarrow E \} \).
- Students with disabilities: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.
- Addressing Sexual Misconduct: Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender identity/expression, you are encouraged to report it to the University’s Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS).
• **Campus Safety:** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu

• **Covid-19 info:** University leadership has urged all faculty, students, and staff to model the vaccination, testing, and masking behaviors we want to see in our campus community. These include:
  
  – Vaccination
  – Masking indoors
  – If unvaccinated, getting weekly asymptomatic coronavirus testing

• **Vaccination**
  
  – Get a COVID-19 vaccination if you have not already done so. Vaccination is proving highly effective in preventing severe COVID-19 symptoms, hospitalization and death from coronavirus. Vaccination is the single best way to stop this COVID resurgence in its tracks.
  – Many in the campus community already have gotten vaccinated, including more than 80
  – Visit https://mychart.med.utah.edu/, https://alert.utah.edu/covid/”, or https://vaccines.gov to schedule your vaccination.

• **Masking**
  
  – While masks are no longer required outside of Health Sciences facilities, UTA buses and campus shuttles, CDC guidelines now call for everyone to wear face masks indoors.
  – Check the CDC website periodically for masking updates.
  – Treat masks like seasonal clothing (i.e. during community surges in COVID transmission, masks are strongly encouraged indoors and in close groups outside).

• **Testing**
  
  – If you are not yet vaccinated, you are recommended to get weekly asymptomatic coronavirus tests. This is a helpful way to protect yourself and those around you because asymptomatic individuals can unknowingly spread the coronavirus to others.
  – Remember: Students must self-report if they test positive for COVID-19 via this website
Week-by-week guide (Tentative)

Week 1: 1.1,1.2,1.3
Week 2: 1.4,1.5,2.1
Week 3: 2.2,2.3.1-3
Week 4: 2.3.4-5, Exam 1
Week 5: 2.3.6-8
Week 6: 2.4
Week 7: 2.5
Week 8: 3.1,3.2
Week 9: Spring Break
Week 10: 3.3.1-2, Exam 2
Week 11: 3.3.2-5
Week 12: 3.4,3.5,3.6
Week 13: 4.1,4.2,4.3,4.4
Week 14: 4.5,4.6, Exam 3
Week 15: 10.1,10.2,10.3
Week 16: 10.4,10.5,10.6
Week 17: (Only Monday) Review

Class policies:

- I reserve the right to modify the class structure and syllabus at any time but I will notify you if and when any changes are made.

- If an emergency arises that prevents you from making it to an exam or turning in a homework it is your responsibility to communicate that information to me as soon as possible. I will do my best to accommodate any situation that comes up. In general, I allow exams to be taken early, but not late.

- If you are struggling with a concept please come talk to me or visit the tutoring center as soon as possible. I am more than happy to meet with you outside of my office hours if my schedule permits it.

- I encourage you to work with others on the homework but anything that you turn in must be your own work. Again, cheating is student misconduct and will be dealt with seriously. If you cheat on any homework, quiz, lab, or exam, I will automatically give you a zero for that grade. Depending on the severity of the cheating, I may decide to fail you from the class. Please note that the use (or even just pulling it out of your pocket) of a cell phone or any other electronic device during any in-class exam is considered cheating and cause for receiving an automatic zero.

- Regrade requests can be made on Gradescope after the homework/quiz/exam was returned with an explanation why more credit is due.