Mathematics 5440 - Partial Differential Equations II
Fall 2015

Instructor: Hakima Bessaih, Ross Hall 210, bessaih@uwyo.edu

Office Hours: MWF 10:00–10:50am and by appointment

Class time & room: MW 2:10pm–3:25pm in RH 247.


Course Description. The theory of PDEs is important for abstract mathematics, applied science, and mathematical modeling. This course covers solution techniques but emphasizes the theoretical framework. Topics include: first order systems; characteristics; hyperbolic, elliptic and parabolic equations; separations of variables; series and transforms; integral relations; Greens functions, maximum principles; variational methods.

Prerequisites. Course in ODE.

Tentative list of topics

- Chapter 1 Partial differential equations.
- Chapter 2 Representation formulas for solutions.
- Chapter 5: Sobolev spaces.
- Chapter 6: Second order elliptic equations.
- Chapter 7: Linear evolution equations

Grading Policy.

- Final exam: There will be no final exam.
- Midterms: There will be no midterms.
• **Homework:** There will approximately 8 to 10 homework assignments to be downloaded from the course homepage: http://www.uwyo.edu/bessaih/. Homework problems are due on the assigned days prior to the lecture. Homework counts for **90%** of the final grade.

• **Attendance/Participation:** I strongly recommend class attendance and participation that will count for **10%** of the final grade.

• **Grading scheme for the final grades:** Grade A: 90-100, Grade B: 80-89, Grade C: 70-79, Grade D: 60-69, Grade F: < 60.

• **Disability statement:** If you have a physical, learning, sensory or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and possibly provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 109 Knight Hall. You may also contact UDSS at (307) 766-6189 or udss@uwyo.edu. Visit their website for more information: www.uwyo.edu/udss

• **Academic honesty:** UW Regulation 6-802. The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head or dean. Other University regulations can be found at: http://www.uwyo.edu/dos

The information in this syllabus is subject to change. If there are changes, they will be announced repeatedly in class.