

MATH 400 101 2023W1 Applied PDEs

Brief Description

This course provides an introduction to practical analytical solution methods for PDEs. Topics include:

1. Parabolic (heat), elliptic (Laplace) and hyperbolic (wave) equations
2. Review of solution by separation of variables and Fourier series
3. Eigenfunction expansions and Sturm-Liouville theory
4. Solution by integral transforms
5. Quasi-linear first-order equations
6. Shocks and applications to traffic flow

Optional text (none required): Elementary Partial Differential Equations, R. Haberman.

More information:

Consult the webpage <https://personal.math.ubc.ca/~njb/> for more information, including sample exams, video lectures and more.

Grading

55% final exam
25% for Midterm
20% Assignments

University Policies

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on the [UBC Senate website](#)