
Instructor
Brian Hassard, 322 Mathematics Building, 645-8808, hassard@buffalo.edu.
My office hours are Mon 2-3, Wed 2-3, and by appointment. Do not hesitate to come during office hours or make an appointment if you have lengthier questions.

Location
The lectures are M W F 1:00PM - 1:50PM Math 150
The labs are F 8:00AM - 8:50AM Math 150, starting Fri. Sept. 9

TA/Help Center/Tutors
The TA, TBA 1XX Mathematics, 645-88XX, TBA@buffalo.edu
will be available during office hours. The Help Center 107/110 Mathematics provides drop-in tutoring for calculus-related issues; For a list of paid tutors and their areas of expertise, see main office Rm 244

Course Description
(Undergraduate; 4 hours credit) Surveys elementary differential equations of physics; separation of variables and superposition of solutions; orthogonal functions and Fourier series. Introduces boundary value problems, Fourier and Laplace transforms. (Graduate; 3 hours credit) Fourier series, sine and cosine series, mean convergence, point-wise convergence, orthogonal functions. Linear ordinary differential equations, solution by Laplace transforms, solution by power series. Green's functions. Partial differential equations: solution of boundary value problems by series, methods of separation of variables, solution of boundary value problems by integral transformations, classification and stability of equations. Additional reading on selected topics.

Prerequisite
MTH306 or equivalent

Text

Topics
The course will cover most of Chapters 1-4 and portions of Chapter 5, 7, 8, 9, 10, and 12. See the course website http://ww2.math.buffalo.edu/418/ for more details.

Homework
There will be both paper-based homework listed at http://ww2.math.buffalo.edu/418/ and WebWork.
Some of the assigned paper-based HW questions will be later identified as an assignment to be turned in as a homework set (HW1, HW2, or HW3) on a due date. Homework is due at the beginning of class on the due date (late homework will not be accepted).
At the top of the first page, please include your name, MTH 418 or MTH 518, and assignment number. For each question, write a clear exposition of your solution (including sentences to explain your work where appropriate).

Each Sunday within a few minutes of midnight, WebWork for the upcoming week will become available at http://ww2.math.buffalo.edu/webwork2/2017_8_MTH418_Hassard/

Your Username is your usual UBIT username, and your Password is your UB person #, see the bottom left of your UB Card (something like 59265358).

The due date will be the Monday three weeks later between 11:56PM and 11:59PM.

Exams

There will be two exams in class during the term and a final exam scheduled during the final exam period. You are permitted one 8.5x11 sheet of paper with notes/formulas for each exam. Material covered in the exam is anything in the book or presented in lecture. The exam will consist of a mix of questions: some easy, some harder.

Grades

418 and 518 will have independent letter grade assignments. For 418, the two in-class tests will each count 20%, the final 30%, (paper) homework 10%, WebWork 15%, and recitation participation/quizzes 5%.

For 518, the two in-class tests will each count 20%, the final 35%, homework 10% and WebWork 15%. Plus and minus letter grades will be assigned, based on the course total out of 100 points. A course total of 90 points is a guaranteed 'A', 80 points is at least a 'B', 70 a 'C' and 60 a 'D'.

See http://ww2.math.buffalo.edu/418/howigrade/ for my letter grade assignment process.

Students taking the course for graduate credit will be assigned additional or more difficult homework and exam questions. 418 and 518 will have independent letter grade assignments.

Incomplete

If any situation arises that will prevent you from completing the course, contact me at 645-8808 to request an incomplete. It will be granted provided the situation is beyond your control AND you have completed 50% or more of the course with an average grade of 50% or greater. See undergraduate incomplete policy

Accommodations

If you have a diagnosed disability (physical, learning or psychological) which will make it difficult for you to carry out the course work as outlined, or requires accommodations such as recruiting note takers, readers or extended time on exams and/or assignments, please advise me during the first two weeks of the course so that we may review arrangements for accommodations.

Academic Honesty

You are expected to adhere to the letter and spirit of academic honesty. For homework assignments, you can discuss assignments with other students, but the details of the solution as submitted are originally yours. You must have your student ID for all exams.


Course relevance

MTH 418 is part of degree programs in Bioinformatics And Computational Biology, Civil Engineering, Engineering Physics, Mathematics, Mechanical Engineering, and Physics. MTH 518 is part of degree programs in Mathematics and Economics.

Dates

Mon Aug 28 First day of class;
Mon Sep 4 class canceled (Labor Day)
??? Sep ? Last day to add/drop
Fri Sep. 8 First recitation 8AM in Math 150
Fri Sep 22 HW1 due
Fri Oct 6 Test 1
Fri Oct 20 HW2 due
Fri Nov 3 Test 2
Fri Nov 10 last day to resign.
Fri Nov 17 HW3 due
Nov 22-24 class canceled (Fall recess)
Dec 8 last class, review
??? Dec 1? Final ?-? in TBA