Objectives
This course is an introduction to partial differential equations (PDE). We will discuss first
order equations, the heat equation, the wave equation and the Poisson equation, the last
three being the prototype of second order equations. We will also discuss nonlinear equations
of each type. We will develop the method of separation of variables and eigenfunction
expansions, which lead to Fourier analysis. Qualitative properties and numerical methods
will also be studied. This corresponds to Chapters 1 to 8 of [1]. MATLAB will be used mostly
for graphical purposes and illustrative computation using [2]. You can access MATLAB in a
WAM Lab, in a GLUE Lab, or on your PC, if you have the Student Version or the Student
Edition of MATLAB. In the WAM and GLUE Labs, MATLAB is on the Sun workstations
and PCs. The Student Version is available in the bookstores and on the MathWorks website

Texts

[2] Jefrery M. Cooper, it Introduction to Partial Differential Equations with MATLAB,

Grading Policy
The final grade will be based on homeworks (40%), two exams (15% each), and a final exam
(30%). No make-up exams will be given, unless a written excuse is presented in advance and
in accordance with University Policies. Computer exercises will use MATLAB. Homeworks
are due before class starts. There will be a penalty of 10% for one day late, 20% for two
days, and so on. Homework will not be accepted after one week.
Exam 1: ≈ Thursday Oct 27.
Exam 2: ≈ Thursday Nov 22.
Final Exam: §§1-5 (Friday, Dec 16, 8-10AM)

Prerequisites
Calculus MATH 240, 241 and Elementary ODE MATH 246 (or equivalent).