Department: Mathematics and Computer Sciences
Division: Applied Mathematics
Level and Major: Undergraduate

Course Title: Partial Differential Equations
Number of Credits: 3
Prerequisite: Differential Equations, Foundation of Mathematical Analysis
Lecturer:

Course Description:

Course Goals and Objectives:

Course Topics:

- Fourier Analysis
- Classification of PDEs, Boundary Value Problems
- Solutions of elliptic equations Laplace, Heat and wave equation
- Parabolic problems, Maximum principles
- Hyperbolic equations, wave equation
- Green function and Dirichlet and Neumann problems
- Sturm-Liouville Differential Equation

Reading Resources:

- Myint-U, T., & Debnath, L. (2007). Linear partial differential equations for scientists and engineers.
- Sneddon, I. N. (2006). *Elements of partial differential equations*. Courier Corporation.
- E. Kreyszig,H. Kreyszig, J. Norminton, Advanced Engineering Mathematics, 10th Edition, JOHN WILEY & SONS, INC, 2011.
- James Ward Brown; Ruel V Churchill (2012), Fourier series and boundary value problems, New York : McGraw-Hill.

Evaluation: