Math 847/ Fall 2015 – Partial Differential Equations I
Time: MWF 11:30–12:20  Place: A-306 Wells Hall

Instructor:  Professor BAISHENG YAN
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Office hours: MWF 2:00–3:00, or by appointment

We will cover most of Chapters 1–3 and part of Chapters 4–6 of the textbook, plus some additional materials; in particular, the following materials will be covered:

- First-order equations – transport equations, general first-order equations, characteristics method, introduction to Hamilton-Jacobi equations
- Laplace’s equation – fundamental solution, Green’s functions, maximum principles, Perron’s method, introduction to second-order linear elliptic equations
- Heat equation – fundamental solution, maximum principles, uniqueness, nonnegative solutions, initial and boundary value problems, introduction to second-order linear parabolic equations
- Wave equation – d’Alembert’s formula, spherical mean method, finite propagation, initial and boundary value problems, energy methods, introduction to second-order linear hyperbolic equations

Homework: Six sets of homework will be assigned, collected and graded. Homework problems may or may not be chosen from the text. It is expected that students also do the problems of each covered chapter of the text. The due date for each homework, usually at least a week after the assignment, will be announced in class. You could turn in the homework anytime before its due date; no late homework will be accepted under any circumstances.

Exams/Grading Policy: There will be two hour-exams (tentatively scheduled below) for the course. Your course grade will be determined by two exams and six homework assignments as follows: Each exam counts 25% of the final grade and six homework assignments count 50% of the final grade. Only under dire circumstances, such as serious illness with a doctor’s written excuse, will a missed exam be allowed; a missed exam may be made up by a take-home exam.

Tentative Exam Schedules:
Exam I: 10/21 (covering mainly the first-order equations and Laplace’s equation)
Exam II: 12/11 (covering mainly the heat equation and wave equation)

Academic Honesty: The University’s policy concerning academic integrity is covered in the Spartan Life booklet, General Student Regulations. According to the handbook, “no student shall claim or submit the work of another as one’s own”. You should strictly abide by these regulations regarding all homework and the hour-exams.

Important Dates for Fall Semester 2015:
Wednesday, September 2 – Classes Begin
Monday, September 7 – Labor Day. No classes
Wednesday, October 21 – Middle of Semester (Exam I)
Friday, November 27 – Thanksgiving Holiday. No classes
Friday, December 11 – Last day of classes (Exam II)