LOCATION, TIME: Ayres Hall 121, MWF 1:25-2:15
INSTRUCTOR: Dr. Alex Freire (PhD 1988; at U.T.K. since 1991)
OFFICE: Ayres Hall 325, phone 974-4313, email freire@math.utk.edu
Office Hours: MTW 11-12 or by appointment

Course description: Mathematical treatment of the classical linear partial
differential equations of Mathematical Physics. Topics include: Wave equation,
harmonic functions and potentials, heat equation, Fourier series, Fourier
transforms, Schroedinger equation. Solution of initial/boundary value problems and
whole-space Cauchy problems.

Prerequisites: Differential equations (M231), Linear Algebra (M251/M200),
Multivariable Calculus (M241)

Text (required): A First Course in Partial Differential Equations, by H.F. Weinberger

Other references (at the same level): W. Strauss (Partial Differential Equations), Y.

Homework: suggested homework problems from the text will be given for each
section covered. About three problems per week will be collected, with the
remaining ones forming the basis for quizzes and tests. HW sets will be collected on
Fridays (at the start of class), and there will be short unannounced quizzes (about
once a week). Late homework or HW turned in electronically are not accepted. The
two lowest HW and two lowest quiz grades will be dropped.

Grading: there will be three tests during the semester, some of which may be take-
home (given Friday, due Monday). The course grade will be based on HW/quizzes
(30%), the two highest test grades (20% each) and a comprehensive final (30%).

Expected grading scale: 55-69: C,C+ 70-84: B-,B,B+ 85 and higher: A-, A. I do not
grade ‘on a curve’ (a student’s grade is independent of how the class as a whole
performs.)

Course policies:

1. Attendance to every lecture is expected. Although there is no attendance grade, I
will take attendance often for control purposes.

2. The following are distracting to the instructor and other students, and will not be
permitted: (i) use of laptops or cell phones during class, or texting; (ii) reading
material not pertaining to the course; (iii) arriving late or leaving early, without warning the instructor in advance.

3. There will be no make-ups of tests, even in case of a justified absence. If you miss a test, this will be the grade you drop.

4. All information about the course (HW problems, topics covered, handouts, instructions to students) will be posted on the course log, linked to the course page: http://www.math.utk.edu/~freire/teaching/m435s14/m435s14index.html

5. There will be no “extra credit” assignments.

6. Students with disabilities: please contact the Office of Disability Services (974-6087 V/T) if you need special arrangements to take this class.

Recommendations:

1. Do not fall behind: this is a fast-paced course, with a lot of non-trivial material to be covered. If you fall behind, it will be difficult to catch up.

2. Read the text carefully, preferably in advance of when the section is covered in lecture. Many details and derivations won’t be presented in class, and students will be expected to read them independently. In class I will emphasize the “big picture” and examples. You may find it helpful to take notes in class.

3. Ask questions if there is something you don’t understand—in class or during office hours.

4. Student feedback: there will be a short in-class survey shortly after the first test, but students are invited to offer constructive criticism or suggestions in person, at any time.

Course outline: for a (tentative) list of topics and dates, see: http://www.math.utk.edu/~freire/teaching/m435s14/m435s14plan.html