

Department of Mathematics  
11:30 am, MWF Spring 2008

University of Iowa

Iowa City, IA 52242  
214 MLH

## 22M:271 Theoretical Numerical Analysis (II)

Instructor: WEIMIN HAN

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Office hours: 1:30–4:30 pm, Wednesdays

**Textbook:** K.E. ATKINSON AND W. HAN, *Theoretical Numerical Analysis*, 2nd edition, Springer, 2005.

**Course description.** The course sequence 22M:270–271 prepares graduate students in mathematics, engineering and physical sciences theoretical background for research in numerical analysis/computational mathematics and helps them to move rapidly into a research program. In 22M:271, we plan to cover the following topics: Sobolev spaces (Chapter 7), weak formulations of boundary value problems (Chapter 8), Galerkin approximations (Chapter 9), finite element method (Chapter 10), elliptic variational inequalities (Chapter 11), well-posedness and numerical methods for the radiative transfer equations.

**Grading.** There will be weekly homework assignment and a final exam. Homeworks will be due every Friday, except the first and last week of the semester. Homeworks and class participation will count 70% of your course grade, and the final exam 30%. The final exam is scheduled at 9:45–11:45 am, Wednesday, May 14th, 2008.

**Course WWW address:** <http://www.math.uiowa.edu/~whan/271.d/271.html>

**Notes to Student.** The Department of Mathematics has offices in 14 MLH. To make an appointment to speak with the chair of the department, call 335-0714 or contact the Departmental Secretary in 14 MLH.

**Academic Fraud.** Plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. Academic fraud is reported to the departmental DEO and then to the Associate Dean for Academic Programs and Services in the College of Liberal Arts and Sciences.

[www.clas.uiowa.edu/students/academic\\_handbook/ix.shtml](http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml)

**Making a Suggestion or a Complaint.** Students have the right to make suggestions or complaints and should first visit with the instructor, then with the course supervisor if appropriate and next with the departmental DEO. All complaints must be made within six months of the incident. [www.clas.uiowa.edu/students/academic\\_handbook/ix.shtml#5](http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5)

**Accommodations for Disabilities.** A student seeking academic accommodations first must register with Student Disability Services and then meet with a SDS counselor who determines eligibility for services. A student approved for accommodations should meet privately with the course instructor to arrange particular accommodations. See [www.uiowa.edu/~sds/](http://www.uiowa.edu/~sds/)

**Understanding Sexual Harassment.** Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit [www.sexualharassment.uiowa.edu/](http://www.sexualharassment.uiowa.edu/) for definitions, assistance, and the full policy.

**Administrative Home of the Course.** The administrative home of this course is the College of Liberal Arts and Sciences, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic fraud or academic probation, and how credits are applied for various CLAS requirements. Please keep in mind that different colleges might have different policies. If you have questions about these or other CLAS policies, visit your academic advisor or 120 Schaeffer Hall and speak with the staff. The CLAS Academic Handbook is another useful source of information on CLAS academic policy: [www.clas.uiowa.edu/students/academic\\_handbook/index.shtml](http://www.clas.uiowa.edu/students/academic_handbook/index.shtml)

**Reacting Safely to Severe Weather.** If severe weather is indicated by the UI outdoor warning system, class members will seek shelter in the innermost part of the building, if possible at the lowest level, staying clear of windows and of free-standing expanses which might prove unstable. The class will resume after the severe weather has ended. See the Operations Manual section 16.14. i.