Math 298: Directed Group Study

1 Unit

Fall 2012 Course Syllabus

Course goals, topics, and learning outcomes

Course goal. To understand the expectations for graduate studies in applied mathematics and to develop basic skills needed for applied mathematics research.

Learning outcomes. Upon completion of this course, students should be able to

1. Know the expectations of graduate students in the applied mathematics graduate studies including required courses, and preliminary exams, for example.
2. Perform basic computational tasks on servers such as login remotely; upload/download data; manage files; use an editor such as vim or emacs; write, compile and execute basic programs in C and Fortran; write and run Matlab scripts.
3. Begin to engage with the applied mathematics literature and learn the tools available through our library that are needed to find and cite references.
4. Prepare documents using LaTeX, and begin to practice communicating mathematics and mathematical results clearly to a broad audience in writing and in speaking.
5. Know what skills are required to participate actively in applied and computational mathematics research, and what opportunities are available.

Relationship to Program Learning Outcomes. Math 298: Directed Group Study addresses two of the five Program Learning Outcomes of the Ph.D. and M.S. programs listed below.

1. PLO #3: Give clear and organized written and verbal explanations of mathematical ideas to a variety of audiences including teaching undergraduate students.
2. PLO #5: Recognize ethical and responsible conduct and learn how to apply them to research.

Directed group study meetings

Purpose. We will introduce new concepts, run through demonstrations, and hold discussions.

Lecture time. M, 1:30 pm – 2:20 pm

Lecture room. CLSSRM 272

Instructor. Arnold D. Kim

E-mail address. adkim@ucmerced.edu

Phone number. (209) 228.2951

Office. CLSSRM 368

Office hours. MW, 3:30 pm - 4:30 pm, or by appointment.

Course materials

Textbook. No text or other materials are required for this course.

Course webpage. The Math 298 website is part of the UCMCROPS course management system. All important course materials will be posted under RESOURCES on this website.

Library. Students will learn to engage with the applied mathematics literature through the online tools provided by our library including MathSciNet, Inspec, RefWorks, various online journals, and interlibrary loan to name a few.

Course wiki. As part of this course, students will develop a wiki page and contribute content to it that will serve to provide information to all applied math students and faculty on basic skills needed for research.

Grade determination

Your grade in this class is determined entirely by class participation and homework assignments.

Additional course information

Dropping the course. You may drop this course without paying a fee and without further approval before 5:00 pm on Thursday, September 15. Dropping the course after this time requires the signed approval of the instructor, and the confirmation of the Dean of the School of Natural Sciences. Please see the UC Merced *General Catalog* for more details.

Special accommodations. If you qualify for accommodations because of a disability, please submit a letter from Disability Services to the instructor in a timely manner so that your needs may be addressed. Student Affairs determines accommodations based on documented disabilities.

We will make every effort to accommodate all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. Please speak with me during the first week of classes regarding any potential academic adjustments or accommodations that may arise due to religious beliefs during this term.

Academic integrity. Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations, plagiarism and other forms of academic dishonesty. The UC Merced Academic Honesty Policy and Adjudication Procedures available on the website: http://studentlife.ucmerced.edu by following the link to Student Judicial Affairs.

Math 298 Tentative Class Schedule

Week	Date	Group Meeting	Topic
Week 1	Aug. 27	Group Meeting 1	Introductions and Syllabus
Week 2	Sept. 3	Labor Day	No Class
Week 3	Sept. 10	Group Meeting 2	Requirements and expectations of graduate students
Week 4	Sept. 17	Group Meeting 3	Discussion on topics covered on the preliminary exams
Week 5	Sept. 24	Group Meeting 4	Server Computing: ssh, X-windows, file managment, text editors
Week 6	Oct. 1	Group Meeting 5	Programming basics in C and Fortran
Week 7	Oct. 8	Group Meeting 6	Applied mathematics literature and our library
Week 8	Oct. 15	Group Meeting 7	Basics of writing a mathematics document using LaTeX
Week 9	Oct. 22	Group Meeting 8	Using LaTeXto prepare slides and posters
Week 10	Oct. 29	Group Meeting 9	Writing and presenting mathematical results
Week 11	Oct. 5	Group Meeting 10	Scholarly research and ethics
Week 12	Nov. 12	Veterans Day	No class
Week 13	Nov. 19	Group Meeting 11	Applied Math Faculty Research Presentations
Week 14	Nov. 26	Group Meeting 12	Applied Math Faculty Research Presentations
Week 15	Dec. 3	Group Meeting 13	Applied Math Faculty Research Presentations