MATH 501: Numerical Analysis and Computation
Spring 2020 Syllabus

Type	Section	Time	Location	Instructor
Lecture	39694R	MWF 12:00-12:50pm	KAP 147	Haitian Yue

Disclaimer: This syllabus does not constitute a contract. The Instructor reserves the right to make changes at his discretion throughout the semester.

Contact Information:

- **Instructor:** Dr. Haitian Yue
  Office: KAP 416F
  Email: haitiany@usc.edu
  Office hours: Thursday 2:00 - 4:00 pm or by appointment

Course Description: Math 501 is a graduate-level course on numerical analysis and computational methods. It will cover the topics: Linear equations and matrices, Gauss elimination, error estimates, iteration techniques; contractive mappings, Newton's method; matrix eigenvalue problems; least-squares approximation, Newton-Cotes and Gaussian quadratures; finite difference methods. Prerequisite: linear algebra and calculus.

Course Textbook:
Kendall E. Atkinson, *An introduction to numerical analysis.* 2nd Edition.
David Kincaid & Ward Cheney, *Numerical Analysis: Mathematics of Scientific Computing.* 1st Edition.

References:
Germund Dahlquist & Åke Björck, *Numerical Methods in Scientific Computing, Volume I.*

Blackboard learning management system: Homework assignments as well as announcements concerning the course will be posted to Blackboard http://blackboard.usc.edu. It is your responsibility to **check Blackboard frequently**. Your scores will also be recorded on Blackboard. It is your responsibility to check that your scores are recorded correctly.

Important Dates:

Jan. 31, Friday	Last day to add or drop[1] classes.
Feb. 28, Friday	Last day to drop a course without a mark of "W" on the transcript.
April 10, Friday	Last day to drop a class with a mark of "W".
May 8, Friday	**Final exam**; Time: 11:00am–1:00pm; Room: TBD

Grade weights:

Written HWs:	35%
Programming HWs:	30%
Midterms: [2]	10%
Final Exam:	25%

Homework:

- Homework will be assigned and posted in Blackboard. An assortment of the problems from each homework will be graded.

- For Programming HWs, you should email **a brief PDF report with your codes** to haitiany@usc.edu.

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[1] drop without a mark "W" and receive a refund
[2] We will have a take home midterm in the spring break.

- The title of the email should be in the following form: **[Math501]Programming HW# YourName.**

- MATLAB[3] is the recommended programming language and other programming languages are also OK.

- **Two lowest Written HWs and two lowest Programming HWs will be dropped in the end.**

Final Exam Policy:

- An A4 cheatsheet is allowed.

- No calculator, cell/smart phone or other electronic device will be allowed during an examination.

- If there is a scheduling conflict for an exam, you must **let ME know at least 2 weeks before the examination**. A scheduling conflict must involve an activity sponsored and approved by USC (marching band, athlete event, etc.). In particular, the university club or organization in question must send an official request, with the Dean's approval, to all faculty. Personal activities do not qualify. **FAILURE TO ATTEND AN EXAMINATION WILL NOT BE EXCUSED UNDER NO CIRCUMSTANCES.**

Academic Integrity: You must abide by the university policies on academic integrity. Please review them here. In essence, these policies require you to be honest. So, please: be honest.

Students with disabilities: Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be the letter is delivered to the instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30a.m.-5:00p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

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[3]https://itservices.usc.edu/matlab/