Instructor: Dr. Yunrong Zhu   **Office**: PS 328B   **Phone**: 282-3819   E-Mail: zhuyunr@isu.edu

Course Website: MOODLE   **Office Hours:** TR 12:00 pm - 1:00 pm, or by appointment

Textbook: R. Kress, *Numerical Analysis*, Springer-Verlag, 1998.

References:

- C. M. Moler, *Numerical Computing with MATLAB*, SIAM, 2004.

- W. Cheney and D. Kincaid, *Numerical Analysis: Mathematics of Scientific Computing*, 3rd Edition, Brooks Cole, 2001.

- A. Quarteroni, F. Saleri, and P. Gervasio, *Scientific Computing with MATLAB and Octave*, Springer, 2014.

- R. L. Burden and J. D. Faires, *Numerical Analysis*, 9th Edition, Cengage Learning, 2010.

Prerequisites: MATH 2240, MATH 3326, and MATH 3360.

Course Objectives: This is the second semester of a two-semester course introduction to numerical analysis (an extension of MATH 4441/5541). The primary objective of the course is to develop understanding of numerical algorithms and skills for solving mathematical problems such as nonlinear equations, systems of linear equations, differential equations, interpolation, numerical integration and differentiation; to explain how, why, and when these techniques can be expected to work; and to provide a foundation for further study of numerical analysis and scientific computing. In this semester, we will emphasize on the analysis of algorithms, with a brief introduction of functional analysis. Matlab will be used as the programming tool for the computer assignments, and learning to use Matlab will be an important part of the course.

Homework: The homework assignments and due dates will be announced in class, and posted on MOODLE. Show all work and include complete, clear explanations and justifications. Please staple your homework together to avoid missing pages. Each assignment will consist of both mathematical analysis problems and algorithm implementation (using MATLAB) for problem solving. **NO later homework** is accepted for any reason, and any missing assignment will be 0.

Exams: There will be two in-class exams and one two-hour cumulative final exam with the tentative schedule as follows:

Exam #1:	**Thursday Feb. 18**
Exam #2:	**Thursday Apr. 7**
Final Exam:	**Tuesday, May 3, 12:30-2:30 p.m.**

All these exams will be held in the classroom PS 324.

Makeup Exams: Students who have a valid documented reason, such as a unavoidable emergency, illness, or university commitments during regular examination times are permitted to schedule a makeup examination with no penalty. In such case, you must contact me or has somebody else contact me **before the exam** if possible, but **no later than the next class meeting**. To take the makeup exam, you must present the documentation, **with detailed description of the problem** for the emergency. Any missed exam will be 0.

Grading: : Students course grade will be based EXCLUSIVELY on HW, two in-class midterm exams, and the final exam. There will be NO "extra credit" work. The weights are distributed as follows:

30% HW+ 20% Better Exam + 15% Lower Exam + 35% Final.

A+	93% and above	C	73%–76%
A-	90%–92%	C-	70%–72%
B+	87%–89%	D+	67%–69%
B	83%–86%	D	63%–66%
B-	80%–82%	D-	60%–62%
C+	77%–79%	F	59% and below

Academic Integrity: Academic integrity is expected of all individuals in academe. Academic dishonesty in any form is unacceptable. Familiarize yourself with the ISU Academic Integrity and Dishonesty Policy.

Extra Help: Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course. Free tutoring is available from the Math Center in the Student Success Center, Rendezvous 327 in Pocatello and CHE Room 220 in Idaho Falls. Information is available at http://www.isu.edu/success/math/index.shtml.

ADA Policy: Idaho State University is committed to providing equal opportunity in education for all students. If you have a diagnosed disability or if you believe you have a disability (physical, learning, hearing, vision, psychiatric) that might require reasonable accommodation in this course, please contact the Disability Services Center, Rendezvous Building, Room 125 (282-3599) http://www.isu.edu/disabilityservices.