

Course Title: Numerical Analysis

Time and Place: TuTh 2:00–3:15 p.m. in DuSable Hall 302

Instructor: Prof. Bello-Cruz

Home page: www.math.niu.edu/~bellocruz

Office: Watson Hall 370

Office Hours: TuTh 3:15 p.m–4:15 p.m.

E-mail: yunierbello@niu.edu

and by appointment

Prerequisite: MATH 232, MATH 239 or MATH 240, and CSCI 230 or CSCI 240, or approved equivalent.

Text: Richard L. Burden and J. Douglas Faires, Numerical Analysis 8th Edition, 2005.

Course Description: Crosslisted as CSCI 435X. Numerical solutions of nonlinear equations, Polynomial interpolation, least squares approximation by polynomials, orthogonal polynomials, economization of power series. Numerical integration including quadrature formulae, adaptive quadrature, composite quadrature formulae, and Romberg integration. Numerical methods for initial value problems including Taylor series methods, Runge-Kutta methods, and multistep methods. Extensive use of computers.

Course Objectives: To reason rigorously in mathematical arguments. To communicate mathematics clearly and efficiently. To understand the subtlety of numerical computation. To obtain facility in the use of technology as applied to mathematical problems.

Grading System:

	MATH 435	MATH 535
Homework	100 points	100 points
Exam 1	100 points	100 points
Exam 2	100 points	100 points
Presentation		Requested
Presentation HW	10-20 points each	10-20 points each
Final Exam	200 points	200 points

Grading Scheme: **A:** 90–100%; **A-:** 85–89%; **B+:** 80–84%; **B:** 75–79%; **B-:** 70–74%; **C+:** 65–69%; **C:** 60–64%; **D:** 50–59%.

Final Exam: No final exams scheduled at this time (TBA).

Attendance Policy: Success in math courses is greatly improved by attending all classes. If you must miss a class, please contact the professor *before* the missed class with a valid reason. Unexplained absences will cost points each.

Academic Integrity: Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a

grade of F for the course involved and may be suspended or dismissed from the university.
<http://catalog.niu.edu/content.php?catoid=18&navoid=541>

Tentative Schedule			
Week	Dates	Tuesday	Thursday
1	Jan 16, 18	Intro–1.1	1.2
2	Jan 23, 25	1.3	2.1
3	Jan 30, Feb 1	2.2	2.3
4	Feb 6, 8	2.4	10.1
5	Feb 13, 15	10.2	Review
6	Feb 20, 22	Exam 1	3.1
7	Feb 27, Mar 1	3.2	3.3
8	Mar 6, 8	8.1, 8.2	8.2, 8.3
	Spring Break		
9	Mar 20, 22	4.1	4.3
10	Mar 27, 29	4.4	4.5
11	Apr 3, 5	4.6	4.7
12	Apr 10, 12	Review	Exam 2
13	Apr 17, 19	5.1	5.2
14	Apr 24, 26	5.3	5.4
15	May 1, 3	5.6	Review

Gender Statement: This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is on the class roster, please let me know. Please also inform me and feel free to correct me and your classmates on your preferred gender pronouns. If you have any questions or concerns, please do not hesitate to speak with me in person, or email me. The Gender and Sexuality Resource Center also has a webpage designed to help support people of all genders as they navigate NIU’s system: <http://niu.edu/gsrc/audience/trans.shtml>.

Accessibility Statement: Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 or drc@niu.edu.