

Course Syllabus
Numerical Methods - Math 3394.01
Fall 2017

Class Meeting Time	TTH 11:00-12:20
Class Meeting Place	LDB 402
Instructor	Dr. John G. Alford
Office	LDB 417B
Phone	(936) 294-4663
E-Mail	jalford@shsu.edu
Office Hours	MW 11:00-12:00, TT 2:00-3:00, or by appointment

Catalog Description

Topics include interpolation, approximations, solutions of equations, and the solution of both linear and nonlinear systems of equations. Also offered as COSC 3394. Normally offered in the Spring. Credit 3.

Course Pre-requisite

COSC 1436 and MATH 1430 with a grade of C or higher in each or instructor consent.

Objectives

The student is expected to gain an understanding of topics that may include (but are not limited to):

- Solutions of equations in one variable
- Interpolation and polynomial approximation
- Direct Methods for solving linear systems
- Iterative techniques in matrix algebra
- Numerical solutions of nonlinear systems of equations
- Initial value problems for ordinary differential equations

Textbook

Textbook: *Numerical Methods, Fourth Edition*, Richard L. Burden and J. Douglas Faires

Technology

This course will involve extensive use of a graphing calculator and computer software. My preference is that you use the computer software package called Matlab or a similar computing environment. A student version of Matlab may be purchased through Mathworks for \$49:

https://www.mathworks.com/academia/student_version.html?s_tid=products_stu_version

Another option is to use a free (open source) computing software packages that are similar to Matlab, for example Sci Lab and Octave, which you can download for free at

- <http://www.scilab.org/>
- <https://www.gnu.org/software/octave/>

If you do not wish to purchase Matlab or do not have a personal computer, Matlab is available on the machines in our computer laboratory in LDB 407 and LDB 415.

You cannot use a graphing calculator that has a computer algebra system (for example, TI 89) or a computer on an exam.

Grade

Your final grade will be based on a weighted average of homework assignments, 2 midterm exams, and a comprehensive final exam. The weights are as follows:

Homework Average: **25% (drop the two lowest homework grades)**,

Exams: **25% each** ,

Comprehensive Final Exam: **25% (replaces lowest exam grade if it is greater)**

Homework assignments will be posted on Blackboard. The final exam is not optional. Make-up exams and make-up homework assignments are only allowed in cases of excused absences (see attendance policy below). You cannot re-take an exam and there are no extra credit assignments.

Important Dates

The last day to Q drop is Friday, November 10.

The final exam is on Thursday, December 7, 12:00-2:00 p.m.

Additional Notes

- Attendance - You should attend all classes and are responsible for all notes, announcements, assignments, quizzes, and exams. You should notify me via phone message or email as soon as possible as to why you were not in class or will not be attending class. **An absence is excused only in cases of medical emergencies, death in the family, or school sponsored events. To excuse an absence, you must provide legitimate documentation (for example, a doctors note) no later than the day that you return to class.**

- **Cell Phone Use:** Use of cell phones (text messaging, social media browsing, etc.) are prohibited during class time except for notifications in cases of emergency. Repeated use of your cell phone in class may result in you being asked to leave class and/or losing the privilege of lowest homework/quiz grades being dropped. During an exam, your cell phone should be stored securely in such a way that it cannot be seen or used. The visible presence of such a device during an exam may result in a zero on the exam and is considered de facto evidence of cheating.
- **Academic Honesty** - The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. [http : //www.shsu.edu/ vaf_www/aps/documents/810213.pdf](http://www.shsu.edu/vaf_www/aps/documents/810213.pdf)
- **Religious Holy Days** - Students are excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. As a courtesy, it is appreciated if you notify me in advance and in writing of the dates and times that are to be missed so that appropriate arrangements can be made regarding homework and/or exams. [http : //www.shsu.edu/ vaf_www/aps/documents/861001.pdf](http://www.shsu.edu/vaf_www/aps/documents/861001.pdf)
- **Disability Issues** - It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

- **Classroom Etiquette** - Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the

Dean of Students for disciplinary action in accordance with university policy. *http :
//www.shsu.edu/students/guide/StudentGuidelines2010 – 2012.pdf#page = 29*

- Visitors in the Classroom - Only registered students may attend class. Exceptions can be made on a case-by-case basis. In all cases, visitors must not present a disruption to the class by their attendance.