Department of Mathematics and Statistics
MTH 475/505—Numerical Methods in
Differential Equations
Fall, 2019

Name: Dr. Jonathan Mitchell
Remind: You must join the course Remind group by texting @mth505-drj to 81010. This will be the predominant way we will communicate. This does not require that you disclose your phone number. Use this to ask questions, receive and read announcements, and find out quickly if I’m in my office if you like.
Email: mitchelljonat@sfasu.edu
YouTube Channel: www.YouTube.com/MathDoctorMitchell
Phone: 936-468-1606
Office: Math building 352
Class meeting time and place: MWF 10:00am-10:50am, room 209
Office Hours: Morning, Afternoon, or by appointment (Remind)
8 – 10AM TTh 1:30 – 3PM MTThF
I have an "open door" policy. When you come to visit, my office door stays open.

Course Description: Numerical Integration, numerical solution of initial value problems, numerical solutions of boundary value problems

Text and Materials
- MATLAB: While you do not have to purchase a student license (~$50), you must have access to the licensed software for you to fulfill the course objectives, assignments, etc. Labs in the Bush Math building 358, 359 could meet the requirements.

Course Requirements
- Three in-class exams—If a student must miss an exam due to an excused absence, special arrangements should be made in advance.
- No cell phone or device. When you arrive to class, put your cell phone on silent (or turn off) and place in the cell-phone caddy. Before any quiz or exam put away all smart watches.
- Projects—We will have periodic in-class activities, quizzes, and projects, which will be designed to have students writing, testing, and submitting algorithms that solve specific problems.
- A cumulative final exam—The final exam is Wednesday, December 11, 10:30AM – 12:30PM
- Homework— We will assign exercises from the textbook for each major topic in the course.

Student Learning Outcomes (SLO): at the end of MTH 475/505, a student who has studied and learned the material should be able to:
1. Work basic problems that make use of ideas covered in the course. [PLO: 2, 4]
2. Define all of the basic terms introduced in the course. [PLO: 1, 3]
3. Provide proofs of important theorems that were discussed in class. [PLO: 1, 3]
4. Write up their solutions of numerical approximations to IVPs and BVPs making use of good language skills. [PLO: 4, 5]
5. Present their solutions to problems they have solved to their classmates. [PLO: 3, 4, 5]
The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

See [http://www2.sfasu.edu/math/docs/syllabi/MTH130Syllabus.pdf](http://www2.sfasu.edu/math/docs/syllabi/MTH130Syllabus.pdf) for elements common to all sections.