

## AMATH 301 Winter 2024 Exam 2 Details

- Location and time: Section A: Tuesday, March 12 8:30am - 9:20am KNE 210, Section B: Wednesday, March 13 8:30am - 9:20am KNE 130, Section C: Thursday, March 14 GWN 301 2:30pm to 3:20pm
- When you arrive to the classroom on exam day, you must pick up an exam when you enter the classroom and then sit with one seat in between you and your neighbor if possible.
- You must sign the academic integrity pledge.
- Scratch paper will be distributed at the beginning of the exam (scratch paper cannot be turned in and graded).

### Note Sheet

- You will be allowed one side of an 8.5 by 11 inch sheet of paper for a note sheet. You may handwrite or type your note sheet, and you will be required to turn it in with your exam. All content of the note sheet must be written in English. **If your note sheet is on a larger sheet of paper or if it is double-sided, or if it is not entirely written in English, it may be taken from you during the exam. Furthermore, if you violate the note sheet restrictions, you may be subject to points deducted from your exam.**

### Exam Details

- You will not be allowed a textbook, or a calculator on this exam.
- Scratch paper will be provided, but any work that you would like to be graded must be written on the exam.
- There will be 5 problems on this exam. There will be 4 problems
- You will not need to code entire algorithms on this exam, you may be asked to write small blocks of code no longer than 3 lines. You will also likely be asked to analyze a given block of code. This could be in the form of explaining what a given block of python code may do when ran in the console, you may be asked to find and fix mistakes in a code, you may be asked what a code would output when ran in the console.

### Problem Distribution and Summary of Material

The exam will cover sections of materials from homework 6, 7, and 8, and one problem from the material covered in the last week of class. This corresponds to the material covered from February 5 to March 8.

- At least one problem from the following topics covered in Homework 6:

- Root finding methods: Bisection method and Newton's method
- At least two problems from the following topics covered in Homework 7:
  - Polynomial interpolation Lagrange form and Newton's form. Numerical differentiation forward difference, backward difference, and central difference methods.
- At least one problem will be from the topics covered in Homework 8:
  - Numerical integration left-hand rule, right-hand rule, midpoint rule, and trapezoid rule.
- One problem on the material covered from the last week of class:
  - Numerical methods for initial value problems: Euler's method and Taylor series methods. (Could be an extra credit problem see below)

### **Extra Credit Problem:**

If 70% of the class submits the course evaluation, I will make the problem from the last week of class an extra credit problem. If it is made to be an extra credit problem, the problem will be worth no more than  $1/3$  of the average point value of the other problems. If 80% of the class submits the course evaluation, I will drop one additional written or coding homework assignment. I will update the class using announcements in Canvas on the course evaluation progress.