Math 3380: Algorithms for Applied Math (Online) Spring 2021

Instructor Information	
Professor:	Dr. Stephen Graves
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Office Hours
By appointment; all office hours will be conducted remotely via Zoom.

The preferred method of contact is via Canvas.
uttyler.instructure.com

Course Information

Official Course Description. Study of applications selected from descriptive statistics, combinatorics, numerical methods, and matrices utilizing the computer.

Course Prerequisites. MATH 2414 completed with a grade of C or better, or concurrent enrollment.

Important Dates from the Academic Calendar		
11 Jan.	First day of classes	
18 Jan.	*Martin Luther King, Jr. Day*	*No classes*
25 Jan.	Census date	
8 – 13 Mar.	*Spring Break*	*No classes*
29 Mar.	Withdrawal deadline	
26 Apr.	Study Day	*No classes*
27 – 30 Apr.	**Final Exam Week**	

Course Content

Textbook. All course materials will be delivered online via Canvas and the web.

Recommended Reading. Burger, E. B. and Starbird, M. *The 5 Elements of Effective Thinking*, Princeton University Press, 2012. ISBN: 978-0-691-15666-8

Student Learning Outcomes. Upon completion of this course, students should be able to do the following:

- Implement and apply basic numerical algorithms.
- Implement and apply basic symbolic algorithms.
- Be able to differentiate between types of algorithms and to both apply and assess them in different contexts.
- Be comfortable enough using the computer to explore mathematics to select a topic of mathematical interest and complete a programming project on that topic.

Academic Honesty

I expect that all work you submit will be your own original work for this course, representative of your understanding of the material, and that you will neither give nor receive aid in any way contradicting this policy. Any violation or perceived violation of this policy will result in a referral to the Director of Judicial Affairs for Academic Dishonesty.

Course Policies

Canvas. Course content will be delivered via Modules on Canvas.

- Mathematics equations do not display correctly on Canvas using all browsers (notably, Safari on MacOS). The safest option is to use Mozilla Firefox which is available for all platforms.
- Exams will be proctored via Zoom videoconferencing. You will need a device to use as a camera during exams – most smart phones will work for this. **You must download the Zoom app and log in using your UT Tyler Patriot credentials.**
- You will often be required to scan written work and submit it via Canvas. Most smart phones will work for this, specifically using the Microsoft OneDrive app.

Email. Announcements and correspondence will be via email to your Patriots account; be sure to check it regularly.

Course Structure. This is a largely asynchronous online course, with the exception of synchronous exams via Zoom. The general weekly process will be as follows:

(1) Read some web-based materials.
(2) Watch a video lecture about the section.
(3) Take a short quiz about the lecture video.
(4) Complete a weekly project involving some written/theoretical work and some programming work.

All weekly work is due to be completed **on Saturday by 11:59 PM**.
You are self-paced for the course *within reason*. There are weekly due dates, and material unlocks sequentially. Trying to complete three sections of work in one day will not be feasible.

Synchronous Proctored Exams. There will be 2 exams which are scheduled on specific dates and at specific times. They will be proctored via Zoom by Dr. Graves. For each exam, there will be two available time slots, 8:30 AM and 7:30 PM. There will also be mandatory practice exams on Thursday, 18 February, so you can be familiar with the testing procedure. You will need to sign up for a particular exam time at least one week in advance.

Exam	**Date**
Midterm	Thursday, 25 February
Final	Thursday, 29 April

Check your calendar right now. If you cannot take the exams on these dates, you must let me know at least two weeks in advance. For extreme last-minute emergencies, an oral or written make-up exam (format decided by instructor) may be given to students who provide university-approved documentation.

- All exams will be comprehensive, but will be skewed toward the newer material covered since the last exam.
- No calculators will be allowed on any exams.
- Exams will be open notes, but no digital resources will be allowed during the exam.
- No online resources (including but not limited to WolframAlpha, Chegg, or Cramster) may be used during exams. Cases of suspected academic dishonesty will be immediately brought to the appropriate University committee for disciplinary action, up to and including an automatic failing grade for the course.
- All answers submitted through Canvas must be accompanied by an uploaded scan of your written work. Submitted answers which are not supported by scanned work will receive no credit.

Weekly Projects. It should be clear that a course entitled Algorithms for Applied Math will have a substantial programming component. The weekly projects will be completed in Python and are due at the same time as all the other weekly materials. Late work will not be accepted.

Lecture Quizzes. In each module you will take short "Lecture Quizzes" after watching a lecture video. The quiz is designed to make sure you undersand the key concepts from the lecture, will be delivered via Canvas, and will be open-book and open-note. You may rewatch the videos as necessary while taking the quiz.

Final Project. A final project will be assigned towards the end of the semester which will have a longer time-frame to complete. This will be due by 11:59 PM on Thursday, April 29.

Grading Policy. Your course grade will be determined by your performance on:

- Lecture quizzes (5%)
- Weekly Projects (25%)
- Midterm Exam (30%)
- Final Exam (30%)
- Final Project (10%)

University Policies

For University policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Course Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, and the Social Security and FERPA Statement please see:

`http://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf`