Instructor:	Leigh Little, Ph.D.	Office Hours:	MWF 10:00 - 11:00
			MWF 12:30 - 1:30
			and by appointment
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Textbooks:

All course materials will distributed in class. There are many online resources available for both Matlab and Python, however one of the aims of the class is algorithmic thinking. In theory this course could be taught in any programming language (including the one with the highly obscene name). You should not use features and capabilities of Matlab and Python not discussed in class.

We will use Blackboard Collaborate in the course. Given social distancing guidelines, this is a better way for me to examine your codes in the event you have problems following along or getting an in class activity to work. You will need to share your computer screen with me through Collaborate in order to do this. Make sure your desktop is free from any offensive content while in class.

Description:

This is an introductory course in structured programming with an emphasis on scientific computing. Scientific computing involves the design and analysis of mathematical models and computer programs used to study problems in a variety of disciplines such as biology, physics, engineering, mathematics, chemistry, and business. Topics include program construction, array variables, conditional logic, looping structures, subroutines, functions and applications to the sciences.

Prerequisites:

- MTH 201 (or concurrent enrollment)

Objectives:

At the completion of this course the student will:

- Understand floating point arithmetic and its possible consequences in numerical computing,

- Translate mathematical models from the sciences into programming languages,

- Understand numerical programming in Matlab and Python

- Present results from computational models in a coherent, ordered manner.

Topics:

1. Computing languages

2. Floating point arithmetic

3. Linear algebra calculations

4. Matlab programming including syntax, program flow, variables, formulas, conditional branching, looping structures, array variables, subroutines, functions and file input/output.

5. Python programming

6. Using and understanding computational models

7. Technical writing

Grading:
Your final grade will be computed according to the following table:

- 60% Homework assignments

- 10% Programming Project

- 15% Midterm examination

- 15% Final examination

Your final weighted average will be determined using the weights indicated and your grade will be determined according to the following scale

Average	Grade	Average	Grade
100-95.0	A	74.0-76.9	C
94.9-90.0	A-	70.0-73.9	C-
87.0-89.9	B+	67.0-69.9	D+
84.0-86.9	B	64.0-66.9	D
80.0-83.9	B-	60.0-63.9	D-
77.0-79.9	C+	< 60.0	E

Assignments:
Homework assignments will have varying due dates. Short assignments will usually be due at the next class meeting while longer assignments will be due in 1-2 weeks time. These assignments typically involve analytical investigation and computer programming.

As the semester proceeds, some assignments will need to be produced using document processing software as MS Word. When computer output is requested, provide printouts of the programs and other material as requested. Do not submit large volumes of printed data.

General Class Policies

- Homework assignments are due before the start of class on the due dates.

- Problems submitted after they have been discussed in class will receive no credit.

- Late assignments will be penalized 25% per day (including weekends and holidays).

- Students can discuss homework, but all work submitted must be your own. Outright copying of assignments will result in a score of zero for all parties involved.

- When computer output is requested, provide printouts of the program, sample output and other material as requested. Do not submit large volumes of printed data.

- Do not print out documents during class. This is very distracting.

- All of my Blackboard mail gets forwarded to my brockport email address. I only use Blackboard to send out mass emails to the class. You don't need to use Blackboard to email me, but if you do, my response will go to your usual Brockport email address.

- I reserve the right to administer quizzes in class (announced or unannounced) at any time. These will be counted as homework assignments. This will almost certainly be done if significant numbers of students fail to submit homework assignments on a timely basis or produce a very low quality of work.

Doing Well in the Class

- Programming is a logical and structured process. You should treat this class the way you would a math class.

- If you are having problems with an assignment, you should avoid the temptation to immediately look online for a solution.

- Start the assignments right away. Programming can be time consuming and a problem that seems simple can be more complex than it initially appears.

- Attend class regularly.

- Ask questions, either in class, in my office or by email.

- You can always email me your program if you are having problems with it.

- If you decide to email me the program, either attach it to your email or paste it into the email. Also, give me some indication of what the problem is (i.e., tell me the error messages you are getting, etc.). Don't just say the program doesn't work.

- All course material (including programs written in class) will be posted on the course website. You should study these between class meetings. You should download and run the programs we write in class to gain insight into how they work.

Mandatory Covid-19 Safety Measures to Protect You and Our SUNY Brockport Community
SUNY Brockport's primary concern during this COVID-19 pandemic focuses on the safety, health, and well-being of students and the college community.
Your compliance with these mandatory safety measures will help reduce the likelihood of COVID cases and keep our campus safe so we can convene in-person classes and student activities. Failure to follow the directive of a college official will result in a referral to the Student Conduct Board and appropriate actions will be taken. Please note, you will be asked to leave the classroom if your behavior endangers yourself or others by not following safety directives set by the college and a referral to the Student Conduct Board will be made. As per the Code of Student Conduct, Failure to Comply with the directive of a college official could result in disciplinary action, including but not limited to removal from the residence halls and/or suspension.

Student cleaning requirements:
- Wipe your work surface (desk or table) and seat prior to use with the disinfectant wipe effective against COVID19 provided in the classroom.

- Deposit the used wipe in a classroom garbage receptacle.

- If shared items are used in the classroom, disinfect them before and after use.

Seating & Social Distancing:
- Do not occupy seats that are marked "Do not sit."

- Maintain social distance (stay 6' apart) from others in the classroom to the extent possible.

Face covering:
- Wear an appropriate face covering that covers your nose and mouth at all times.

- You may lift your mask briefly to take a drink. Eating is not permitted inside the classroom.

Healthy Practices:
- Do not report to class if you are feeling ill. Leave class quietly and immediately if you are feeling unwell and notify your instructor as soon as you able to.

- Follow respiratory hygiene and cough etiquette. Avoid touching your eyes, nose, and mouth, and wash your hands after touching your face. Cover coughs and sneezes. Wash your hands with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, sneezing, or touching your face. If soap and water are not readily available, use a hand sanitizer that contains at least 60widely available throughout the campus, it is less effective than washing with soap and water. Washing your hands often is considered the best practice.

Any student who feels ill or has any medical needs should contact the Student Health Center at (585) 395-2414 or your personal physician to discuss your symptoms. If you think you need to see a medical professional, contact the Student Health Center to make an appointment first as there are no walk in hours at this time. Students who experience significant cough, worsening of chronic asthma symptoms, a fever that lasts more than two to three days, dizziness, and/or dehydration should be evaluated. If symptoms are severe and urgent assistance is needed, contact the Student Health Center and/or University Police on campus (585) 395-2222 or 911 if off campus.

Emergency Evacuation Considerations:
In the event of an evacuation alarm, everyone should immediately find the nearest exit, leave the building, and proceed to an assembly area with a face covering on and maintain social distance from others to the extent possible. While it is important to maintain social distance, you should not delay exiting the building in order to do so in the event of any emergency. In areas where separate entrances/exits have been established, it is important to note that these do not apply in the event of an emergency. Individuals should use the nearest exit. When re-entering the building, maintain social distance from others. Upon re-entering the building, avoid congregating in the entranceway or lobby. Take the stairs instead of the elevator whenever possible.

Student Accessibility Services Disability Statement:
The College at Brockport, State University at New York is committed to fostering an optimal learning environment by applying current principles and practices of equity, diversity, and inclusion. If you are a student with a disability and want to utilize academic accommodations, you must register with Student Accessibility Services (SAS) to obtain an official accommodation letter which must be submitted to faculty for accommodation implementation. If you think you have a disability, you may want to meet with SAS to learn about related resources. You can find out more about Student Accessibility Services at `https://www.brockport.edu/life/accessibility_services/`, or by contacting SAS via sasoffice@brockport.edu, or 585-395-5409. Students, faculty, staff, and SAS work together to create an inclusive learning environment.

COLLEGE POLICIES
This course will adhere to all relevant College at Brockport policies. Details for all policies may be found at the following website. http://www.brockport.edu/policies/index.php

THE POLICY ON STUDENT ACADEMIC DISHONESTY
(from Your Right to Know & Academic Policies publication)
Academic dishonesty is a serious breach of that trust which exists between a student, one's fellow students and the instructor. Academic dishonesty is a major violation of College policy, which can result in the failure of a course as well as in a range of disciplinary actions, from an official warning to suspension or dismissal from the College. Any student suspected of such a violation will be subject to charges. Violations of academic honesty include, but are not limited to, the actions described in the next section. Published divisional unit and/or individual policies will address additional circumstances unique to specific academic area(s).

Definitions of Academic Dishonesty

1) Plagiarism: Presenting as one's own words, ideas, or products of another without providing a standard form of documentation, such as footnotes, endnotes, or bibliographic documentation.

2) Fabricating facts, statistics, or other forms of evidence in papers, laboratory experiments, or other assignments.

3) Presenting someone else's paper, computer work, or other material as one's own work.

4) Writing, or attempting to write, an examination, paper, computer work, or other material for another student; allowing someone else to take one's examination.

5) Buying and selling of examinations: Possession of examinations or answers to examinations without permission of the instructor.

6) Using "cheat sheets," looking onto another's paper, or talking to someone other than the instructor or proctor during an examination, without the instructor's permission.

7) Failing to follow the rules of conduct for taking an examination as stipulated by the instructor prior to the examination or as stated by him/her in a written course syllabus.

8) Presenting work for which credit has been received or will be received in another course without the consent of the instructor(s).

9) Forging of official College documents, which includes, but is not limited to, grade sheets, change of grade forms, and transcripts.

TITLE IX COMPLIANCE

Sex and Gender discrimination, including sexual harassment, are prohibited in educational programs and activities, including classes. Title IX legislation and College policy require the College to provide sex and gender equity in all areas of campus life. If you or someone you know has experienced sex or gender discrimination, sexual harassment, sexual assault, intimate partner violence, or stalking, we encourage you to seek assistance and to report the incident through resources available at `https://brockport.edu/about/title_ix/`. Confidential assistance is available on campus at Hazen Center for Integrated Care and RESTORE. Faculty are NOT confidential under Title IX and will need to share information with the Title IX & College Compliance Officer. For these and other policies governing campus life, please see https://www.brockport.edu/support/policies/student.php.

MODIFICATION OF THE COLLEGE WITHDRAWAL POLICY
Revised February 18, 2002

Stage 1: During the "Drop" period (the first four weeks of the semester) a student is able to drop a course directly through the usual drop procedures. This is a registration issue and no notation will appear on the permanent transcript.

Stage 2: During the "Withdrawal period" (the next six weeks of the semester) a student will be able to withdraw from the course by submitting a withdrawal form to Registration and Records. A notation of a "W" will appear on the permanent record. The instructor's signature and permission is not required but a copy of the withdrawal form will be provided to the instructor for his/her record. The student should check with the Office of Financial Aid to determine the financial aid implication of the proposed withdrawal.

Stage 3: During the "Late Withdrawal period" (the remaining weeks of the semester up to the Friday before the last week of classes) a student can petition to withdraw from a course for specific, documented "extraordinary circumstances." The student must fill out a Late Withdrawal forms, including the reason(s) for requesting Late Withdrawal. The expeditious decision of the department chair is required before the form is filed with Registration and Records. The student should check with the Office of Financial Aid to determine the financial aid implication of the proposed withdrawal. A student officially withdrawn will receive a "W" for the course on the transcript, and the instructor will receive a copy of the withdrawal form. A student can expect a chairperson's approval of a withdrawal request for any of the following reasons:

- Documented personal illness or injury with serious impact on course performance
- Documented illness or injury of a close family member for whom the student has extensive responsibility – child, sibling, parent, etc.
- Documented serious family problem that might reasonably be expected to cause significant emotional reaction for the student
- Documented change in student's work hours (required by employer) that interferes with class times or documented increase in work hours (required by employer) that prevent the student's further participation in the course).
- Other documented circumstances, not under the student's control, that might reasonably be expected to have had a significant negative impact on the student's ability to complete the course(s).

A student must provide the department chairperson with documentation from an appropriate professional familiar with the situation to support the request for withdrawal.

Withdrawal from one or more courses to make the total course load more manageable when faced with circumstances such as the ones listed above may be appropriate. In such situations, the student should be expected to make a personal and rational decision about which course(s) s/he would be best advised to leave.

The only way a student may withdraw from a course is to submit a Withdrawal form to the Registrar's Office by the Friday before the last week of classes. Failure to submit this form by the appropriate deadline will result in a

final grade as determined by the grading policy of the course. No withdrawals will be permitted after the Friday before the final week of classes unless the student can document that s/he was unable to meet this deadline because of incapacitation. For appeals involving requests to withdraw after the deadline, there will be an absolute limit of one calendar year unless the student can show that s/he was incapacitated for a longer period of time.

APPEALS: If the departmental chairperson denies the student's request for withdrawal, the chairperson will state the reason(s) for the denial on the withdrawal form. The student may then address the reason(s) for the denial (also in writing) and submit the request for withdrawal as an appeal to the dean of the school. The dean will make a decision based on the written materials submitted, but could also request additional information from either the student and/or chairperson. Appeals must reach the dean's office before the withdrawal deadline for the semester.

Courses that meet for less than the full semester will have a proportionate schedule available from the Registrar's Office.

The Registrar's Office is required to charge a transaction fee for recording a "W".