

<b>Instructor:</b>	Leigh Little, Ph.D.	<b>Office Hours:</b>	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

**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:**

1. 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**

- 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.

## **Policies**

### **Attendance:**

You are expected to attend all classes. Significant amounts of material are not contained in the textbook. If you miss a class, it is your responsibility to get class notes and handouts and find out what you missed. The instructor reserves the right to fail any student who acquires more than 4 unexcused absences. No incompletes or withdrawals will be given for this course except in cases of illness, personal tragedy, or extraordinary circumstances beyond the student's control, and then only if documented to the instructor's satisfaction.

Here is the official College at Brockport Attendance Policy:

*The student is responsible for all assigned course work and cannot be absolved of this responsibility. When enrolled in a particular course, the student is obligated to do all of the work assigned. Punctual and regular attendance is vital to the discharge of this obligation. Absences, excused or not, do not alter this responsibility. Absences deemed excessive by the instructor may result in a lowered grade. Students whose unexcused absences exceed 15% of the scheduled classes and laboratories will be subject to failure at the instructor's discretion. Absences will be excused for (a) documented illness, (b) official representation of the college, (c) death of a close relative, (d) religious holiday, and (e) circumstances beyond the control of the student. Excuses for official representation of the college must be obtained from the official supervising that activity or event. Policies regarding absences from quizzes, exams, and laboratory sessions will be at the discretion of the instructor. Substantiation of excused absences is, in any case, the responsibility of the student. Regulations more restrictive than those stated above may be established by the instructor.*

### **Course Withdrawl Policy:**

- 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 "Withdrawl period" (the next six weeks of the semester) a student will be able to withdraw from the course by submitting a withdrawl form to the Office of Registration and Records. A notation of "W" will appear on the permanent record. The instructor's signature and permission is not required, but a copy of the withdrawl 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 withdrawl.
- Stage 3: During the "Late Withdrawl 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 Withdrawl form, including the reason(s) for requesting the Late Withdrawl. The expeditious decision of the department chair is required before the form is filed with the Office of Registration and Records. The student should check with the Office of Financial Aid to determine the financial aid implication of the proposed withdrawl. A student officially withdrawn will receive a "W" for the course on the transcript and the instructor will receive a copy of the withdrawl form.

A student can expect a chairperson's approval of a withdrawl 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 changes in the 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 the 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 last 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 department 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 the 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."

### **Students with Disabilities**

Students with documented disabilities may be entitled to specific accommodations. SUNY Brockport’s Office for Students with Disabilities makes this determination. Please contact the Office for Students with Disabilities at 395-5409 or [osdoffic@brockport.edu](mailto:osdoffic@brockport.edu) to inquire about obtaining an official letter to the course instructor detailing approved accommodations. The student is responsible for providing the course instructor with an official letter. Faculty work as a team with the Office for Students with Disabilities to meet the needs of students with disabilities.

### **Student Academic Dishonesty**

(from Your Right to Know & Academic Policies document) 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 Statement**

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](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>.

#### **Buckley Amendment:**

The purpose of the Buckley Amendment is to protect the confidentiality of your grades. This law states that I cannot reveal any information regarding your performance in the course to anyone other than yourself and authorized college administrators without your written permission.

#### **Disclaimer:**

Announcements given in class are considered official addenda to this policy. All policies described are subject to change as the situation warrants. Should changes be necessary, all students will be notified in a timely fashion.