

MAT241 CRN 2254

Syllabus

Fall 2024, T-Th 3:05 PM– 4:20 PM SAMC 393

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Instructor: Dr. Joaquin Carbonara

Office: SAMC 379

Email: carbonjo@buffalostate.edu

Phone: (716) 878-6423

Class Website: (<http://3.230.252.179/joaquin.html>)

Office Hours: TBD. Details provided in class.

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Text Book: We will be using an online textbook called *Fundamentals of Python Programming*. It is available at <https://runestone.academy/>. Instructions will be provided the first day of class. Please use only that account for the duration of this course.

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Goals:

- Answer the question: "What is Computer Science?"
 - Get excited about CS! You can do this!
 - Develop your problem-solving skills.
 - Experience the broad range of disciplines in which computer science is important.
 - Learn the Python programming language and how to program as a way of expressing solutions to the problems we solve.
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Student Learning Outcomes:

- Identify the key components of problem solving.
- Translate human-language problem solving algorithms into computer language.
- Demonstrate an understanding of basic programming concepts: syntax, sequences,

iteration, conditionals, sorting.

- Identify which problem-solving techniques are appropriate for assigned projects.
- Apply techniques learned in class to projects that involve problems from diverse areas.

Objectives and Specific Skills:

- Obtain fluency in the use of the following programming and data structures:
 - Assignment statements.
 - Conditionals.
 - Definite loops.
 - Indefinite loops.
 - Strings.
 - Lists (arrays).
 - Dictionaries (Maps).
 - Files.
 - Abstraction - writing functions.
 - Decomposition - breaking a problem into smaller pieces.
- Understand fundamental concepts in coding (e.g., debugging is an essential part of programming, maybe even the main part of programming).
- Master the following programming patterns for problem solving:
 - The accumulator pattern.
 - Guess and check.
 - Problem decomposition.
 - Divide and conquer.
 - Map - Filter.
 - Map - Reduce.
- Develop the ability to cope with complexity in problem solving with computers:
 - Decompose the problem.
 - Start small.
 - Test the small pieces.
 - Put together the small pieces that work into a larger whole.

Homework and Class Preparation:

In this class, you will have daily assignments, including reading assignments from the online textbook. The online textbook provides a flipped classroom style of learning. Your primary

source for new information will come from the book. The reading assignments are active; you must interact with the material, not just passively read it.

Tips for Success:

- Programming can be time-consuming. Start early to avoid frustration. Your program is unlikely to work right the first time; be patient.
 - Start small! A small, partially working program is better than a large one that crashes.
 - Always feel free to ask questions.
 - The materials in this class build on each other. It's crucial to keep up. If you get behind, let's discuss a strategy to catch up.
 - Technical problems are almost inevitable.
 - In Class – We'll use computers daily. Avoid distractions like checking social media or email.
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Grading:

- Runestone Reading: 20%
- In-Class Exercises and Labs: 20%
- In-Class Quizzes: 20%
- Midterm: 20%
- Final: 20%
- **Total: 100%**

Late Work will not be accepted unless an exception is granted. Due to the class's nature, late work can disrupt the learning process.

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Schedule: The class schedule will be updated regularly. Check the (<http://joaquincourses.online>) or (<http://3.230.252.179/joaquin.html>) for updates.

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Accommodations:

Students requiring accommodations due to a disability should contact the **Student Accessibility Services (SAS) Office** located in E. H. Butler Library 160. You can call them at (716) 878-4500, email at sas@buffalostate.edu, or complete their request by filling out the Initial Accommodation Request form.

The Dean of Students Office helps students navigate the college experience, particularly during difficult situations such as personal, financial, medical, and/or family crises. If you or someone

you know needs support, services are available. For a list of support services and information, please visit <http://deanofstudents.buffalostate.edu/>, 716-878-4618 or stop by 311 Campbell Student Union during business hours.

Bengal 2 Bengal is an emergency fund offered for students in need. More information on parameters of the fund and application requirements can be found on the Dean of Student's website: <https://deanofstudents.buffalostate.edu/emergency-relief-programbengal2bengal-fund>.

The Milligan's Food Pantry is an excellent resource for students on campus. Milligan's provides students who are food insecure with the opportunity to get non-perishable food from a campus source. Juliet Meade, can respond to questions regarding Milligan's or the Emergency Relief Fund and is available at meadejl@buffalostate.edu or at 716-878-4618.

[Student Conduct and Community Standards Office](#): Phone: (716) 878-3051

[Weigel Health Center: Phone](#): (716) 878 – 6711

[The Counseling Center](#): Phone: (716) 878-4436

Student Resources Page: <http://deanofstudents.buffalostate.edu/resources-students>

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