MET CS 526 Data Structures and Algorithms
2025 Fall 2 Online Course Syllabus

Instructor

Alan Burstein, alanbur@bu.edu

Course Duration

Start: October 28, 2025
End: December 15, 2025

Course credits

4 credits

Course Description

This course offers a comprehensive study of fundamental data structures and algorithms used in computer science. Students will be equipped with the problem-solving skills and knowledge to solve challenging computational problems and implement data structures using a high-level programming language. Algorithms are analyzed, decomposed, and expressed using pseudocode.

Prerequisites: MET CS 300 and either MET CS 520 or MET CS 521. Or instructor consent.

Course Learning Objectives

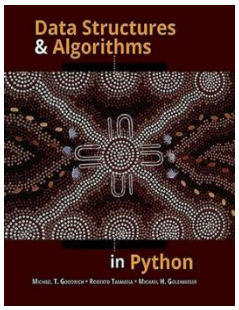
By successfully completing this course, you will be able to do the following:

- Use fundamental data structures to support the implementation of algorithms.
- Deeply understand of algorithmic design and analysis.
- Use computational problem-solving skills (enhanced with hands-on assignments) to work on real-world projects.
- Implement algorithms using pseudocode.
- Describe trade-offs between efficiency, correctness, and other resources when choosing algorithms.
- Illustrate the execution of the pseudocode of an algorithm, using a sample input.

Course Materials

Required Book

You have the option to use one of the following books:

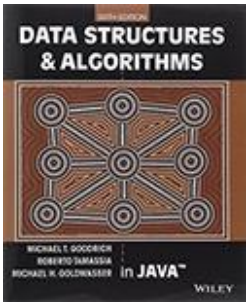


Goodrich, M. T., Tamassia, R., & Goldwasser, M. T. (2013). *Data structures and algorithms in Python* (1st ed.).
John Wiley & Sons

ISBN-13: 978-1118290279

This book can be purchased from Barnes and Noble at Boston University.

OR:



Goodrich, M. T., Tamassia, R., & Goldwasser, M. T. (2014). *Data structures and algorithms in Java* (6th ed.).
John Wiley & Sons

ISBN-13: 978-1118771334

This book can be purchased from Barnes and Noble at Boston University.

Tools Requirements

1. Broadband internet
2. PC, Mac, or Linux with comfortable screen size for editing source code
3. Internet browser (Firefox, Chrome, Free Download)
4. A zip compression utility
5. PDF reader (Adobe Reader or Foxit Reader, free download)
6. An integrated development environment (IDE) is recommended (any IDE is okay), but not required.
7. Java Development Kit (JDK; free download)

Microsoft Azure Dev Tools for Teaching

Microsoft Azure Dev Tools for Teaching is a Microsoft program that supports technical education by providing access to Microsoft software for learning, teaching, and research purposes. Our membership allows faculty and students currently enrolled in MET courses to obtain certain Microsoft products free of charge. All MET students are granted access to download the software for the duration of their study at MET College.

FAQ and basic information are at Microsoft Azure Dev Tools for Teaching, (You may have to enter your personal BU login credentials to access this page.)

Study Guide and Timeline of Deliverables

Module 1 Study Guide and Deliverables
(October 28 – November 3, 2025)

Module Topics:

- Programming Concepts Review
- OO Concepts Review
- Arrays
- Linked Lists
- Recursion

Readings:

- Module 1 online content
- Textbook readings:
    - Java Textbook: Chapter 1, Chapter 2, Chapter 3, Appendix A
      …or
      Python Textbook: Chapter 1, Chapter 2, Chapter 5, Chapter 7, Appendix A

Assignments:

- Assignment 1 due **Tuesday, November 4, at 6:00 AM ET**
- Lab 1 due **Tuesday, November 4, at 6:00 AM ET**

Assessments:

- Quiz 1 due **Tuesday, November 4, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, October 28, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Module 2 Study Guide and Deliverables
(November 4 – November 10, 2025)

Module Topics:

- Algorithm Analysis
- Analysis of Recursive Algorithms
- Stacks and Queues
- List

Readings:

- Module 2 online content

- Textbook readings:
    - Java Textbook: Chapter 4, Chapter 5, Chapter 6
      …or
      Python Textbook: Chapter 3, Chapter 4, Chapter 6

Assignments:

- Assignment 2 due **Tuesday, November 11, at 6:00 AM ET**
- Lab 2 due **Tuesday, November 11, at 6:00 AM ET**

Assessments:

- Quiz 2 due **Tuesday, November 11, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 4, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Module 3 Study Guide and Deliverables

(November 11 – November 17, 2025)

Module Topics:

- Trees
- Search Trees

Readings:

- Module 3 online content
- Textbook readings:
    - Java Textbook: Chapters 8, 11
      …or
      Python Textbook: Chapters 8, 11

Assignments:

- Assignment 3 due **Tuesday, November 18, at 6:00 AM ET**
- Lab 3 due **Tuesday, November 18, at 6:00 AM ET**

Assessments:

- Quiz 3 due **Tuesday, November 18, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 11, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Module 4 Study Guide and Deliverables

(November 18 – November 24, 2025)

Module Topics:

- Priority Queues and Heaps
- Maps and Hash Tables

Readings:

- Module 4 online content
- Textbook readings:
    - Java Textbook: Chapter 9, Chapter 10 (except 10.4)
      …or
      Python Textbook: Chapter 9, Chapter 10 (except 10.4)

Assignments:

- Assignment 4 due **Tuesday, November 25, at 6:00 AM ET**
- Lab 4 due **Tuesday, November 25, at 6:00 AM ET**

Assessments:

- Quiz 4 due **Tuesday, November 25, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 18, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Module 5 Study Guide and Deliverables

(November 25 – December 1, 2025)

Module Topics:

- Sorting and Selection
- Stable Matching
- Greedy Algorithms
- Dynamic Programming

Readings:

- Module 5 online content
- Textbook readings:
    - Java Textbook: Chapter 12, Chapter 13 (13.4, 13.5)
      …or
      Python Textbook: Chapter 12, Chapter 13 (13.4, 13.5)

Assignments:

- Assignment 5 due **Tuesday, December 2, at 6:00 AM ET**
- Lab 5 due **Tuesday, December 2, at 6:00 AM ET**

Assessments:

- Quiz 5 due **Tuesday, December 2, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 25, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Module 6 Study Guide and Deliverables (December 2 – December 8, 2025)

Module Topics:

- Graph Algorithms
- Computational Complexity

Readings:

- Module 6 online content
- Textbook readings:
    - Java Textbook: Chapter 14 (except 14.4)
      …or
      Python Textbook: Chapter 14 (except 14.4)

Assignments:

- Assignment 6 due **Tuesday, December 9, at 6:00 AM ET**
- Lab 6 due **Tuesday, December 9, at 6:00 AM ET**

Assessments:

- Quiz 6 due **Tuesday, December 9, at 6:00 AM ET**

Live Classrooms:

- **Tuesday, December 2, 7:00-8:30 PM ET**
- Facilitators are available by appointment.

Course Evaluation:

Please complete the course evaluation once you receive an email or Blackboard notification indicating the evaluation is open. Your feedback is important to MET, as it helps us make improvements to the program and the course for future students.

Final Exam Details

The Final Exam is a proctored exam available from **Wednesday, December 10, 2025, at 6:00 AM ET to Saturday, December 13, 2025, at 11:59 PM ET**.

The Computer Science department requires that all final exams be administered using an online proctoring service, which you will access via your course in Blackboard. In order to take the exam, you are required to have a working computer, webcam, speakers, and microphone that meet the proctoring service's system requirements. A detailed list of those requirements can be found in the Proctored Exam Information module located on the course home page. Additional information regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your proctored exam session within the defined exam window.

The exam is accessible during the final exam period. You can access it from the Assessments section of the course. Your proctor will enter the password to start the exam.

Final Exam Duration: **3 hours (180 minutes)**

The exam consists of **multiple-choice and multiple-answer questions**.

Grading Information

Please check the Study Guide in the syllabus for Live Classroom dates and specific due dates for assignments and assessments.

Grading Structure and Distribution

The grade for the course is determined by the following:

Overall Grading Percentages	
Assignments	30
Labs	30
Quizzes	10
Final Exam	30

94 ≤ G	A
90 ≤ G < 94	A−
87 ≤ G < 90	B+
83 ≤ G < 87	B
80 ≤ G < 83	B−
77 ≤ G < 80	C+
73 ≤ G < 77	C

70 ≤ G < 73	C–
60 ≤ G < 70	D
G < 60	F

Graded Items

- **Assignments:** There is one assignment due during each module (check the due date in the Study Guide). The assignments reinforce the theory of the concepts we learn in class. You submit the assignment on Gradescope.
- **Labs:** There is one lab due each module (check the due date in the Study Guide). The labs provide students with a hands-on interview-like practical problem to extend the theory taught in class into a more real-world environment. You submit the lab on Gradescope.

  Gradescope for Assignments and Labs

  Please watch the video tutorial or follow the step-by-step guide to learn how you can submit your assignments.

- **Quizzes:** There is one quiz due during each module (check the due date in the Study Guide). You submit the quiz in each module.
- **Proctored Final Exam:** There will be a proctored final exam in this course (check the final exam period in the Study Guide). Detailed instructions regarding your proctored exam are forthcoming from the assessment administrator. You will be responsible for scheduling your own appointment.

Ungraded Items

- **Practice Questions:** There are practice questions built into each module, covering the module materials. They are not graded. You are encouraged to try them as often as you wish to practice your skills learned in the learning module.
- **Ungraded Discussion Forums:** There are ungraded discussion forums throughout the course. You are encouraged to share your knowledge and learn from your peers.
- **Live classroom sessions:** Live Classroom sessions will be offered during this course in Modules 1 to 6. Days/times will be posted in the Study Guide and the "Announcements" area.
    - Your participation, while not graded, will be valuable to you and the class. To participate in the Live Classroom discussion, you will need to go to the "Live Classroom/Offices" area. **If you are not able to attend the live classrooms, consider watching the recordings as mandatory.**
    - Live Classroom sessions will be recorded and archived for further viewing. You can go to the "Live Classroom Recordings" area to view the recordings.
    - You need to have speakers and a microphone for your computer. A headset is recommended.

Expectations

It is important for each student to participate on a regular basis and complete all aspects of this

course.

Due dates will be indicated in the Study Guide and in each graded item's section. If, for any reason, you are unable to meet any deadline, contact your course facilitator. Assignments are expected to be submitted by their respective due dates. Extensions may be granted, though **only under mitigating circumstances**. If your facilitator grants an extension, you will not be penalized. If you submit an assignment late without the permission of your facilitator, there will be a late penalty of 10% off your grade per day.

Policy for the Use of Generative AI

Students should learn how to use AI text generators and other AI-based assistive resources (collectively, AI tools) to enhance rather than damage their developing abilities as writers, coders, communicators, and thinkers.

When using Generative AI in coursework, students shall:

1. Give credit to AI tools whenever used, even if only to generate ideas rather than usable text or illustrations.
2. When using AI tools on assignments, add an appendix showing (a) the entire exchange, highlighting the most relevant sections; (b) a description of precisely which AI tools were used (e.g. ChatGPT private subscription version or DALL-E free version), (c) an explanation of how the AI tools were used (e.g. to generate ideas, turns of phrase, elements of text, long stretches of text, lines of argument, pieces of evidence, maps of conceptual territory, illustrations of key concepts, etc.); (d) an account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to handle mounting stress, to clarify prose, to translate text, to experiment for fun, etc.).
3. Not use AI tools during in-class examinations, or assignments, unless explicitly permitted and instructed.
4. Employ AI detection tools and originality checks prior to submission, ensuring that their submitted work is not mistakenly flagged.
5. Use AI tools wisely and intelligently, aiming to deepen understanding of subject matter and to support learning.

For more details, please see the Generative AI Assistance (GAIA) policy.

Course Policies and Academic Conduct

Academic Integrity: Plagiarism is the passing off of another's words or ideas as your own, and it is a serious academic offense. Plagiarism and cheating also defeat the purpose of getting an education. Plagiarism and cheating cases will be handled in accordance with the disciplinary procedures described in the College of Arts and Sciences Academic Conduct Code. You are expected to know and abide by the code, which can be read online: Academic Conduct Code.

Penalties range from failing an assignment or course (first offense) to suspension or expulsion from BU. If in doubt, cite your source. If you have any questions about academic integrity, please ask your instructor.

Incidents of academic misconduct will be reported to the Academic Conduct Committee (ACC). The ACC may suspend/expel students found guilty of misconduct.

Important Message on Final Exams

Dear Boston University Computer Science Online Student,

As part of our ongoing efforts to maintain the high academic standard of all Boston University programs, including our online MSCIS degree program, the Computer Science Department at Boston University's Metropolitan College requires that each of the online courses includes a proctored final examination.

By requiring proctored finals, we are ensuring the excellence and fairness of our program. The final exam is administered online.

Specific information regarding final-exam scheduling will be provided approximately two weeks into the course. This early notification is being given so that you will have enough time to plan for where you will take the final exam.

I know that you recognize the value of your Boston University degree and that you will support the efforts of the University to maintain the highest standards in our online degree program.

Thank you very much for your support with this important issue.

Regards,

Professor Lou Chitkushev, Ph.D.
Associate Dean for Academic Affairs
Boston University Metropolitan College

Who's Who: Roles and Responsibilities

You will meet many BU people in this course and program. Some of these people you will meet online, and some you will communicate with by email and telephone. There are many people behind the scenes, too, including instructional designers, faculty who assist with course preparation, and video and animation specialists.

People in Your Online Course in Addition to Your Fellow Students

Your Facilitator. Our classes are divided into small groups, and each group has its own facilitator. We carefully select and train our facilitators for their expertise in the subject matter and their excellence in teaching. Your facilitator is responsible for stimulating discussions in pedagogically useful areas, for answering your questions, and for grading homework assignments, discussions, term projects, and any manually graded quiz or final-exam questions. If you ask your facilitator a question by email, you should get a response within 24 hours, and usually faster. If you need a question answered urgently, post your question to one of the urgent help topics, where everyone can see it and answer it.

Your Professor. The professor for your course has primary responsibility for the course. If you have any questions that your facilitator doesn't answer quickly and to your satisfaction, then send your professor an email in the course, with a cc to your facilitator so that your facilitator is aware of your question and your professor's response.

Your Lead Faculty and Student Support Administrator, Jennifer Sullivan. Jen is here to ensure you have a positive online experience. You will receive emails and announcements from Jen throughout the semester. Jen represents Boston University's university services and works for BU Virtual. She prepares students for milestones such as course launch, final exams, and course evaluations. She is a resource to both students and faculty. For example, Jen can direct your university questions and concerns to the appropriate party. She also handles general questions regarding Online Campus functionality for students, faculty, and facilitators, but she does not provide tech support. She is enrolled in all classes and can be contacted within the course through Online Campus email as it is running. You can also contact her by external email at jensul@bu.edu or call (617) 358-1978.

People Not in Your Online Course

Although you will not normally encounter the following people in your online course, they are central to the program. You may receive emails or phone calls from them, and you should feel free to contact them.

Your Computer Science Department Online Program Coordinator. The online program coordinator administers the academic aspects of the program, including admissions and registration. You can ask questions about the program, registration, course offerings, graduation, or any other program-related topic. The online program coordinator can be reached at metcsol@bu.edu or (617) 353-2566.

Your Computer Science Department Program Manager, Crystal Kelley. Crystal is responsible for administering most aspects of the Computer Science Department. You can reach Crystal at kelleycr@bu.edu or (617) 353-2566.

Andrew Gorlin, Academic Advisor. Reviews requests for transfer credits and waivers. Advises students on which courses to take to meet their career goals. You can reach Andrew

at asgorlin@bu.edu, or (617)-353-2566.

Professor Guanglan Zhang, Computer Science Department Chairman. You can reach Professor Zhang at guanglan@bu.edu or at 617-358-2566.

Professor Lou T. Chitkushev, Associate Dean for Academic Affairs, Metropolitan College. Dr. Chitkushev is responsible for the academic programs of Metropolitan College. Contact Professor Chitkushev with any issues that you feel have not been addressed adequately. The customary issue-escalation sequence after your course facilitator and course faculty is Professor Temkin, and then Professor Chitkushev.

Professor Tanya Zlateva, Metropolitan College Dean. Dr. Zlateva is responsible for the quality of all the academic programs at Boston University Metropolitan College.

Disability and Access Services

In accordance with university policy, every effort will be made to accommodate students with respect to speech, hearing, vision, or other disabilities. Any student who may need an accommodation for a documented disability should contact Disability and Access Services at 617-353-3658 or at access@bu.edu for review and approval of accommodation requests.

Once a student receives their accommodation letter, they must send it to their instructor and/or facilitator each semester. They must also send a copy to their Faculty & Student Support Administrator, who may need to update the course settings to ensure accommodation is in place. Accommodation cannot be implemented if the students do not send their letters.