



COSC 2336-102/602H3

Programming Fundamentals III

Course Semester (Fall 2025), 8/19/2025 – 12/4/2025

Tuesday and Thursday, 11:00 am – 12:20 pm

STEAM Classroom S1.146

Instructor Information:

Name: Charmiane Mantooth

Email: Email: cmantooth2@com.edu

Student/Office hours in the classroom, S1.146, before or after class, by appointment

Required Textbook:

Starting Out with Java: From Control Structures through Data Structures, 4th Edition

by Tony Gaddis

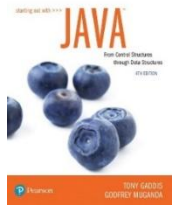
Publisher: Pearson

Print ISBN: 9780134787961

eText ISBN: 9780134757223

Edition: 4th

Copyright year: 2019



There is no access code required for this course. All required course materials will be available in the textbook itself and online on Brightspace D2L (Desire to Learn). The Java source files listed in the textbook are posted in D2L. This is the same book used for Programming Fundamentals II.

Course Description:

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), searching, sorting, recursion, and algorithmic analysis. Programs will be implemented in the Java Programming Language. This course is included in the Associate of Science Degree for Computer Science, and is considered a Capstone course. It is also included in COM's Programming Certificate. COSC 1437, Programming Fundamentals II, is a prerequisite.

Course Requirements:

Programming Fundamentals III consists of lectures delivered in the classroom and hands-on exercises, worked by the students in the classroom. Each student has access to a COM personal computer in the classroom. These computers have the necessary software installed for working the hands-on exercises.

Students are also required to complete assignments outside of class. Success in programming depends on a lot of practice. It is inevitable that writing code will involve a good deal of debugging. It is an important part of learning how to program. Even though learning programming takes time, it is fun and satisfying to get programs to work properly.

You will need the Java Development Kit (JDK) Version 8 and the NetBeans Integrated Development Environment on your own computer. Both are free of charge. These are the same tools used for Programming II, COSC 1437 or COSC 1337. Be sure you have the JDK Version 8, not a later version. Later versions do not work correctly with the graphics assignments. As a Capstone Course, this course will culminate in a Capstone project, which encompasses multiple concepts from various chapters in the text.

Grading Formula:

The grade is determined by the completion of the programming assignments, chapter review quizzes, pop quizzes and chapter tests, as described in the grading formula below.

COURSE ITEM	% of Total Grade
Chapter Review Quizzes and Daily Quizzes* (20)	20%
Chapter Assignments (10)	30%
Chapter Tests (2)	30%
Capstone project	20%
Total	100%

***Daily quizzes will be held in many, but not**

all class periods, and can only be completed by those physically present in class.

Grading Scale:

Letter Grade	Percent
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Late Work, Make-Up, and Extra-Credit Policy:

All assignments must be completed according to the deadline date. Late work will not be accepted. Contact the instructor if you have any issues. There is no extra credit in this course.

Attendance Policy:

All students are expected to attend all sessions in the classroom. There are no recordings of lectures and labs. If you cannot attend a class, you are still responsible for that content. Please contact a classmate or consult D2L to find out what you missed, and be sure to meet all deadlines, as they will not be extended. Daily Quizzes will only be administered to students present on the day of the quiz.

All assignments and specific due dates are in D2L, COM's Learning Management System. Each student is expected to access D2L on a regular basis to be cognizant of all assignments. All tests are also in D2L and must be taken in the classroom. No remote submissions for tests are allowed.

Computer and Internet access: Regarding problems with your own computer and with Internet access, COM is not responsible for outages, and due dates will not be extended.

Cell Phone Usage: Cell phone usage is not allowed during class.

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means.

Student Learner Outcome	Maps to Core Objective	Assessed by Assignment(s)
1. Design and develop programs that implement basic data structures, including stacks, queues, linked lists, hash tables, trees, and graphs.	Critical Thinking	Programming projects for Chapters 19 and 20. Capstone Project.
2. Apply recursive techniques and algorithms to solve problems.	Critical Thinking	Chapter 15 programming project
3. Implement sorting and searching algorithms	Empirical and Quantitative Skills	Chapter 16 programming project
4. Understand algorithm efficiency, Big-O notation, and why it should be considered in programming.	Communication (written)	Chapter 16 programming project
5. Analyze and select appropriate data structures to implement a solution to a problem	Empirical and Quantitative Skills	Chapter 20 programming project.
6. Design and implement data structures using classes and incorporating object-oriented concepts.	Critical Thinking	Chapter 17 (Generics) programming project. Capstone project.
7. Demonstrate best practices of software development including testing, validation, and documentation.	Critical Thinking	Chapter 17 (Generics) programming project. Capstone Project.

Academic Dishonesty:

Any incident of academic policy will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exams is an extremely serious offense and will result in a grade of zero on that exam and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action. Depending on AI tools for writing code will constitute Academic Dishonesty. Any assignments that appear to contain code obtained through AI will be thoroughly checked using an AI Code Checker program, and if it is determined that a student used AI to generate code, the student will be awarded a grade of 0 for that assignment. Red flags will include code that is more sophisticated than expected, code that uses concepts not covered in class, code that is uncharacteristic of a student's typical code, etc.

Student Concerns:

If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Mr. Leslie Richardson, Math and Computer Science Department Chair, at 409-933-8329, email lrichardson@com.edu.

Updates to this Syllabus:

The instructor reserves the right to update this syllabus. All substantive changes will be communicated to students as soon as possible, in the classroom and through email.

Course Outline

Week	Date	Topic
1	8/19 – 8/21	Chapter 11 Exceptions Programming Assignment Chapter 11 Quiz
2	8/26 – 8/28	Chapter 12: JavaFX: GUI and Basic Controls Quiz, Chapter 12
3	9/2 – 9/4	Chapter 12: JavaFX: GUI and Basic Controls Programming Assignment Chapter 13, Advanced Controls
4	9/9 – 9/11	Chapter 13: JavaFX: Advanced Controls Quiz, Chapters 13 and Chapter 13 Programming Assignment
5	9/16 – 9/18	Chapter 14: JavaFX: Graphics, Effects and Media Quiz, Chapter 14
6	9/23 – 9/25	Chapter 14 Programming Assignment <u>Test # 1, Chapters 11 – 14 on Thursday in the classroom. No remote submissions.</u>
7	9/30 – 10/2	Chapter 15: Recursion Quiz, Chapter 15 and Programming Assignment
8	10/7 – 10/9	Chapter 16: Sorting, Searching and Algorithm Analysis
9	10/14 – 10/16	Quiz, Chapter 16 and Programming Assignment Begin Chapter 17, Generics
10	10/21 – 10/23	Quiz, Chapter 17 and Chapter 17 Programming Assignment <u>Test # 2, Chapters 15-17 on Thursday in the classroom. No remote submissions..</u>
11	10/28 – 10/30	Chapter 18, Collections and the Stream API Quiz, Chapter 18 and Programming Assignment
12	11/4 – 11/6	Chapter 19 Linked Lists Quiz, Chapter 19
13	11/11 – 11/13	Chapter 20, Stacks and Queues Quiz, Chapter 20
14	11/18 – 11/20	Chapter 20, Stacks and Queues Start Capstone Project
15	11/25 – 11/27	Work on Capstone Project Thanksgiving Break
16	12/2 – 12/ 4	Complete and turn in Capstone Project as TEST grade

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook <https://www.com.edu/student-services/student-handbook.html>. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodations is requested to contact:

Kimberly Lachney, Student Accessibility Services Coordinator

Phone: 409-933-8919

Email: AccessibilityServices@com.edu

Location: COM Doyle Family Administration Building, Student Success Center

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is October 1. The last date to withdraw from the 16-week session is **November 14**. The last date to withdraw for the 2nd 8-week session is November 25.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress:

If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.

Nondiscrimination Statement:

The College District prohibits discrimination, including harassment, against any individual on the basis of race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.