

COSC 2436-101HY**Programming Fundamentals III (Spring 2022), 1/17/2022 – 5/13/2022****1:30 – 2:50 Tuesday and Thursday****STEAM classroom S1.146****Instructor Information:****Name:** Faith (Fay) Alexander**Email:** Email: fbryan@com.edu**Phone:** Office phone: 409-933-8334, if no answer, leave a message for a callback**Office Location:** STEAM 225.55**Student / Office Hours and Location:**

Monday, 9 – 9:30am, 11:00am – 12:30 pm, S225.55

Tuesday, 9 – 9:30am, 11:00am – 12:30 pm, S225.55

Wednesday, 9 – 9:30am, 11:00am – 12:30 pm, S225.55

Thursday, 9 – 9:30am, 11:00am – 12:30 pm, S225.55

Other days and times are by appointment with the instructor

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

by Tony Gaddis

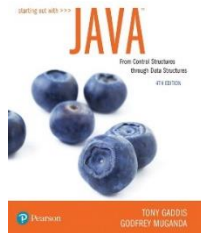
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eText ISBN: 9780134757223

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 on Blackboard. However, this textbook has an access code inside the front cover that enables use of the textbook companion site, provided by the publisher. This material is not required. The Java source files listed in the textbook are posted in Blackboard.

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. It is also included in COM's Programming Certificate. COSC 1437 (or 1337), Programming II, is a prerequisite.

Course Requirements:

Programming Fundamentals II 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. Students should plan to work at least one hour outside of class for every hour spent in class. More time might be necessary. 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 NetBeans.

Semester Project

The semester project is a group project, emphasizing both Java graphics and data structures. It will include design, code and test components. Details are in Blackboard.

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.

Grading Formula:

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

COURSE ITEM	% of Total Grade
Chapter Review Quizzes	20%
Chapter Assignments	60%
Semester Project	20%
Total	100%

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 to find out what you missed, and be sure to meet all deadlines, as they will not be extended.

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
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.
7. Demonstrate best practices of software development including testing, validation, and documentation.	Critical Thinking	Chapter 17 (Generics) programming 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.

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.

Course Outline

Week	Date	Topic
1	1/18 - 1/20	Chapter 10: Inheritance Review, Chapter 11 Exceptions
2	1/25 – 1/27	Chapter 12: JavaFX: GUI and Basic Controls
3	2/1 – 2/3	Chapter 12: JavaFX: GUI and Basic Controls Review Question Quiz, Chapter 12
4	2/8 – 2/10	Chapter 13: JavaFX: Advanced Controls
5	2/15 – 2/17	Chapter 13: JavaFX: Advanced Controls Review Question Quiz, Chapter 13
6	2/22 – 2/24	Chapter 14: JavaFX: Graphics, Effects and Media
7	3/1 – 3/3	Chapter 14: JavaFX: Graphics, Effects and Media
8	3/8 – 3/10	Chapter 14: JavaFX: Graphics, Effects and Media Review Question Quiz, Chapter 14 Chapter 15: Recursion Review Question Quiz, Chapter 15
	SPRING BREAK	SPRING BREAK
9	3/22 – 3/24	Chapter 16: Sorting, Searching and Algorithm Analysis Review Question Quiz, Chapter 16
10	3/29 – 3/30	Chapter 17: Generics
11	4/5 – 4/7	Chapter 17: Generics Review Question Quiz, Chapter 17
12	4/12 – 4/14	Chapter 18: Collections and the Stream API Review Question Quiz, Chapter 18
13	4/19 – 4/21	Chapter 19: Linked Lists Review Question Quiz, Chapter 19
14	4/26 - 4/28	Chapter 20: Stacks and Queues Review Question Quiz, Chapter 20
15	5/3 – 5/5	Chapter 20: Stacks and Queues
16	5/10 – 5/12	Semester Project Due on 5/10

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://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf. *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.

https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf

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 Holly Bankston at 409-933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Counseling Statement: Any student needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or hbankston@com.edu. Counseling services are available on campus in the student center for free and students can also email counseling@com.edu to set up their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

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 March 2. The last date to withdraw from the 16-week session is April 25. The last date to withdraw for the 2nd 8-week session is May 4.

F_N Grading: The F_N grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The F_N 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 F_N grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an F_N 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.

COVID-19 Statement: All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at www.com.edu/coronavirus. In compliance with Governor Abbott's May 18 Executive Order, face

coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit com.edu/coronavirus for future updates.

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 Blackboard announcements.