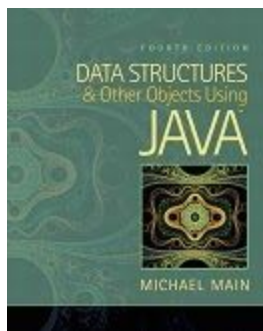**Section Info:**

Section 01x - CRN 27555

Tuesday and Thursday 2:30 pm - 4:50 pm West Building W309

Versions

- Version 0.0 - 1/20/2020 - first release

Book Information

Data Structures & Other Objects Using Java, Michael Main, 4th Edition

Picture of book:

Instructor

Name: Stephen T. Brower   **Office:** West Building W324
Work # (908) 526-1200 x8259   **preferred email:** stephen.brower@raritanval.edu

Note:

==*For those that had a class with Brower before take note: there is a VERY different Late/Life Happens policy than in the past ...even different than Fall 2019*==

Instructor Website

Website has information on any changes to office hours (example: no office hours during Spring Break)

Website has a link to the class page for this course where you can get the Syllabus and Class Schedule. Website does not require you to logon

See: http://rvccmccs01.raritanval.edu/~sbrower/

Spring 2020 Office Hours (1/21 - 5/4)

- Monday 2:00 - 3:00
- Wednesday 3:00 - 5:30
- Thursday 5:00 - 6:30
- AND by appointment

Course Overview

Prerequisite: CSIT(CISY) 105 Foundations of Computer Science or GDEV(CISY) 242 Object Oriented Programming:
This course introduces students to the fundamental data structures used in Computer Science. The data structures covered include linked lists, doubly linked lists, stacks, queues, trees, and graphs. Algorithms that manipulate these data structures are discussed and used in laboratory work. Students are introduced to the run-time analysis of algorithms and basic algorithms for searching and sorting.

General Education Goals:

After completion of this course, students will be able to:
1. design and develop data structures that efficiently address program requirements (G.E. 1)
2. analyze the data structures used in computer applications and the issues surrounding their implementation (G.E. 2, 4)
3. apply quantitative reasoning to analyze the performance of data structure algorithms in order to efficiently solve problems (G.E. 7)

Course learning outcomes:

At the conclusion of the course, students will be able to:
1. compare and contrast the basic data structures used in Computer Science: lists, stacks, queues, trees and graphs
2. identify and implement the basic operations for manipulating each type of data structure
3. create data structures using Java
4. analyze the run-time analysis of algorithms and express them using O ( ) notation
5. apply recursion to data structure operations
6. identify the appropriate data structure for a given problem
7. analyze algorithms to search or sort the data in various data structures (arrays, queues, stacks, etc.) and interpret their run-time performance
8. create and execute test plans which include the testing of boundary conditions

Honors Option

An Honors Option is available for this course. A general requirement for Honors courses and Honors Option courses is a minimum grade point average of 3.5

"Definition: Students pursuing the Honors Option will be required to demonstrate a higher level of knowledge and skill in each of their course programming projects. They will be required to take the concepts introduced and generalize them for broader application. Students will also do independent work researching application programming interfaces." (Master Course Outline)

For this Honors Option, the demonstration of a higher level of knowledge and skill will be through enhanced Labs and Projects. The independent work for research will be through additional research components for Homework

The expectation is that all of the 'honors option' exercises be completed. However, since the 10th day is the last day to switch to the honors option section, then the expectation is that 90% of the 'honors option' exercises be completed. If more than 10% of the 'honors option' exercises are not completed then for the assignments completed without the honors option beyond 10% of the assignments a penalty will be assessed

For some of the assignments, there are extra credit options for the students in the 'regular section' that are mandatory for the students in the 'honors section' and the grade is based on the proportion of the total points. For example: suppose there is 15 points extra credit on an assignment, for the students in the 'honors section' their grade is based on the total points / 115. If a student switches from the 'honors section' back to the 'regular section', the grade will be recalculated.

Enrolling in the Honors Option Section: By the "10th Day of the semester" (aim for 1/28) fill out an Add/Drop form that drops Section 01X and adds Section 01H and get the instructor's signature (by 1/28) and the department chair's signature. After the form is filled out and signed then take it to the registrar.

Exiting the Honors Option Section: If you wish to switch back to the regular section, by the withdrawal date (4/6), fill out an Add/Drop form that drops Section 01H and adds Section 01X and get the instructor's signature and the department chair. After the form is filled out and signed then take it to the registrar.

Which Email to use and Email Response Time

If you have a question or you need an assignment "returned to you" in Canvas, the preferred (fastest) way to contact the instructor is via his preferred email**:** stephen.brower@raritanval.edu

Over the last several semesters, I found the email system embedded in Canvas frustrating. So please email me at: stephen.brower@raritanval.edu

The goal is to respond in less than 24 hours.

Occasionally there are known exceptions such as during Spring Break where a response may take a little longer. If the instructor knows ahead of time there will be a period of unavailability longer than 24 hours, that will be communicated to the class.

Software / Computer Requirements

The computer labs have the software needed to complete the in-class labs.

If you own a computer you can download the Java JDK and NetBeans which will replicate the setup that we have on campus. There are links from the instructor's Course Web Page with some information.

For access to Java outside of class time, if you do not own a computer, you can use the Open Lab on the second floor of the West Building which is open 6 days a week. See the hours posted outside the Open Lab

Canvas, will be used for distribution of files and notes.

Course Routine

Classes will usually consist of 3 possible segments: Lecture, Lab Lecture, and Lab Time

Lecture

A majority of the lectures will be on topics within Data Structures. Some of the lecture will be the theoretical nature of Data Structures, which will include a number of crudely drawn pictures, a discussion of algorithms that act on Data Structures, and in some cases Pseudocode.

Lab Lecture

the Lab Lecture will be an introduction to the week's lab which could be a review of the topic(s) introduced in the Lecture or simply "here".

Lab

There are two kinds of labs: *Data Structure Labs* and *Programming Labs*. *Data Structure Labs* will be paper-based group exercises related to the Data Structure topics from the lectures. *Programming Lab* will be for individual work using the computer to implement Data Structures in Java to solve problems. During Lab time, take as many breaks as needed.

If you finish the lab early, you should look ahead on the Class Schedule to work on the next programming project (if posted) or do the next homework that is due

Grade Determinants:

Item	Percent
Homework	10%
Data Structure Labs	10%
Programming Labs	20%
Programming Projects	20%
Mid-Term Exam	15%
Final Exam	25%

Grade   % Range
A   89.5-100.0+
B+   86.5-89.4
B   79.5-86.4
C+   76.5-79.4
C   69.5 - 76.4
D   59.5 - 69.4
F   0 - 59.4

Homework

The Homework will be posted in Canvas. Homework must be submitted electronically via Canvas as a document saved as a **.docx** or **.rtf** file.:

See below for the Late Policy(don't be late) and the Cheating Policy (don't cheat)

Data Structure Labs

For classes that introduce new Data Structures, the Data Structure Lab on a topic may be a drawing showing a series of operations on a Data Structure.

The instructor will review the Data Structure Lab before the beginning of lab time.

Most Data Structure Labs will be paper based, can be done in small groups, and are due at the end of the class in which they are distributed

See below for the Late Policy(don't be late). Since the Data Structure Labs are group-based, the Cheating Policy as stated below isn't applicable.

Programming Labs

Programming Labs will be programs written independently in Java to implement a Data Structure to solve some problems.

All of the Programming Labs have some assumptions for clean input so that the focus can be on the writing and use of the data structure. For example assuming a number entered is a number.

Some Programming Labs have been abbreviated to be done in the class-time allotted and those abbreviated labs are due at the end of the class by 4:50 pm and ones submitted after 4:50 pm will receive a Late Penalty because extra time was taken.

Some Programming Labs distributed on Tuesday and due Thursday have not been abbreviated and there is some wiggle-room...like 11:59 instead of 4:50 pm.

The instructor will review the Programming Lab before the beginning of lab time.

The .java* files are to be submitted as attachments to the assignment in Canvas - *alternatively, a .zip file of the folder that contains the .java files or a .zip of the NetBeans project.

See below for the Late Policy(don't be late) and the Cheating Policy (don't cheat)

Programming Lab Compiling Policy

As a second course using Java, the expectation is that your Java code will compile. For all of the Programming Labs from Programming Lab 4 and beyond, if the code submitted does not compile, or if the instructor's tester used to test the classes submitted does not compile, the assignment is a 0.

The only edits that will be made to get the program to compile is to remove the -# that Canvas adds to the file name when there are additional submissions and the package statement

Programming Projects

The idea behind Programming Projects is that they are more complex than labs and are used to demonstrate mastery of Data Structures. A number of them also do not have the assumptions for clean input that the Programming Labs have.

A reminder that Java is in the open Lab in the West Building which is open 6 days a week. Java is also available for download from the Oracle WebSite. See the instructor's website for more information.

The .java* files are to be submitted as attachments to the assignment in Canvas. alternatively, a .zip file of the folder that contains the .java files or a .zip of the NetBeans project.

See below for the Late Policy(don't be late) and the Cheating Policy (don't cheat)

Project Compiling Policy

As a second course using Java, the expectation is that your Java code will compile. For all of the Projects, if the code submitted does not compile, or if the instructor's tester used to test the classes submitted does not compile, the assignment is a 0.

The only edits that will be made to get the program to compile is to remove the -# that Canvas adds to the file name when there are additional submissions and the package statement

Exams

Note the Class Schedule for the dates of the exams. If you are late for the exam, you will only have the time until the scheduled end of the exam.

Exams must be taken on days assigned. If you know ahead of time that you cannot make an exam, ask the instructor to arrange for the exam to be left in the testing center or to arrange another time.

About a week before each exam, a 'information' sheet on the exam will be distributed. That information sheet will cover the format and content of the exam.

Failure to notify the instructor that the Midterm exam will be missed will result in a makeup that *might* be harder, *not by design, but by consequence of being different.* Missing the Final Exam will result in a 0 on the Final Exam so that grades can be submitted on time before fleeing the state.

The Midterm Exam will be one hour long; the Final Exam will be two hours long. Both exams will be closed note /closed book / closed computer, and cumulative up to that point.

Cheating Policy - *Don't cheat!*

Cheating is not allowed on Homework, Programming Labs, Programming Projects, and Exams. All parties involved in cheating will receive a 0 and will be reported to the dean. Excessive cheating within the class can result in an F for the course. Excessive cheating at RVCC can result in expulsion. Consult your student manual.

NOTE: you have permission to use the instructor's demo .java files, in whole or in part, for your programming labs and programming projects (just cite that in a comment in the code) and you have permission to use the code the instructor writes on the whiteboard (just cite that in a comment in the code) and you have permission to use the code in the book, in while or in part (just cite that in a comment in the code).

NOTE: if you are getting a compilation error, turning to your neighbor and asking them what the error means is ok. As for the neighbor giving an answer to a compilation error question, these are examples of ok answers: 'you mispelled the variable name' or 'you're missing a ;' or 'you shouldn't have a ;' or 'you're missing (a) curly brace(s)...no the curlier curly brace' or 'you know the code is on the slides' or 'you know the code is in the book' or my favorite answer: 'the instructor wrote the code on the board, didn't you write it down?'

Late Policy

Don't submit work late!

According to the RVCC Catalog, students are not to be penalized for 1 week of absences. To accommodate this, at the end of the semester the lowest homework, the lowest programming lab and the lowest Data Structures lab will be dropped.

"Life Happens"

According to the RVCC Catalog, students are not to be penalized for 1 week of absences. To accommodate this, at the end of the semester the lowest homework, the lowest programming lab and the lowest Data Structures lab will be dropped. That handles life happens.

Compiling Policy

As a second course using Java, the expectation is that your Java code will compile. For all of the Projects and for all of the Programming Labs *starting with* Programming Lab 4, if the code submitted does not compile, or if the instructor's tester used to test the classes submitted does not compile, the assignment is a 0.

The only edits that will be made to get the program to compile is to remove the -# that Canvas adds to the file name when there are additional submissions and the package statement.

Extra Credit

Some exams/homework/labs/projects contain extra credit questions/opportunities. Other than that, no extra credit opportunities will be provided.

For example, if you choose not to submit ANY homework and then in April you ask for "Extra Credit" to make up for the missed homework, the answer is NO.

Classroom Behavior

Cell Phones:

For the "lectures" please silence cell phones. It is understood that there may be times when emergency calls occur or the "pick me up at the airport" call needs to happen. For those calls please step into the hallway to take the call. During lab time, you can turn the sounds back on the cell phones.

Talking:

For the "lectures" please don't talk. It is understood that you may need to turn to a neighbor for the occasional question like "what slide is he on?" or "which file is that?" or "what page # did he say?" and that's fine. It is the full conversations that are distracting not only to me but to the class as a whole. For the Lab Time you can talk all you want, but "indoor voices" please.

Language:

The instructor will try his darn-doodliest to not swear during class time but an occasional expletive may slip out. Please try your darn-doodliest not to swear but don't fear reprisals if an occasional expletive slips out.

Proper Use of Computers:

During Lecture:

the instructor is easily distracted by typing and would prefer that computers are not used during the lecture. **Printing during lecture is extremely distracting and very upsetting** Pointing and laughing at the monitors is very distracting. If class members repeatedly distract the instructor, then all computers and laptops must be closed down.

During Lab:

During lab time everyone should be working on the labs/projects/homework. None of the labs/projects/homework require social media sites.

Class Attendance

Students are expected to attend all classes for every course in which they are enrolled. To accommodate students' reasonable, personal situations that might prevent them from attending classes, each student is entitled to excused absences amounting to the equivalent of one week's class time in a semester. Absences in excess of this standard are handled individually by each faculty member. A student with absences amounting to one-fifth or more of the term's lecture or laboratory classes is subject to administrative withdrawal by the Dean of Instruction upon the recommendation of the faculty member.

Note:

Sometimes attendance is taken based on what graded items were not returned. If you come in late and see that graded items were returned, please wait for a break or Lab Time to get your graded items

Withdrawal Procedure

See school's webpage for Spring 2020 Withdrawal and Refund Schedule and Refund Info (see:
https://commons.raritanval.edu/admin/finance/Documents/Spring%202020%20WithdrawalRefundSchedule%20and%20Enrollment_Payment%20Calendar.pdf)

(see: https://commons.raritanval.edu/admin/finance/Pages/refund_info.aspx)

Class Schedule

Please see the Class Schedule for the listing of lecture topics and timing of homework / labs / projects / exams

Syllabus Part 2-College Policies

Please see the "Syllabus Part 2-College Policies" document

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