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# CSIS 2175 – 001: ADVANCED INTEGRATED SOFTWARE DEVELOPMENT

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| SEMESTER: | 2022-S | INSTRUCTOR: | Jay Yang |
| COURSE TIME: | Wed. 15:30-18:20 | ROOM: | N5107 |
| EMAIL: | [yangz11@douglascollege.ca](mailto:yangz11@douglascollege.ca) | TELEPHONE: | 6045275977 |
| OFFICE HOURS: | Fri. 15:30-17:30pm (Appointment required) | LOCATION: | N4335G |

*\*All times shown are in Pacific Standard Time (PST)*

### COURSE MATERIALS REQUIRED

Java Programming 10th Edition by Joyce Farrell, Cengage Learning/Course Technology **ISBN:**9780357673423, 0357673425

**eBook:** https://douglascollege.vitalsource.com/products/java-programming-joyce-farrell-v9798214347028

# \*if you prefer to use the eText for the same book at a cheaper price, you can do so.

\*the textbook is **required** for this course.

## COURSE SPECIFIC TECHNICAL REQUIREMENTS

In order to practice the coding skill at home, students registering for the Summer term need to ensure access to the following,

**• A good USB key with minimal 8 GB storage space**

**• A computer (minimum specification)**

o Quad-core CPU

o 8 GB RAM

o 512 GB Storage (SSD Recommended)

o FHD (1920x1080) minimum resolution display

o Wifi

o Ethernet

o Web Camera

**• Browser**

o Chrome/Firefox

o Respondus LockDown Browser for exams

http://www.respondus.com/lockdown/download.php?id=474545144

**• Peripherals**

o Mic, headset

**• Software to be used**

o Eclipse for Java (version 2023 – 3 )

https://www.eclipse.org/downloads/

o Git (open source distributed version control system)

https://git-scm.com/downloads

### COURSE OBJECTIVES

At the end of this course the successful student will be able to:

* Identify the purpose and behavior of a provided code fragment.
* Modify an existing code fragment to change its behavior.
* Modify conditional and iterative structures in a short program.
* Write well-structured, well- documented, well-commented readable code.
* Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, basic conditional and iterative structures, and functions.
* Describe the syntax and semantics of conditional structures.
* Use conditional structures.
* Apply the techniques of decomposition to break a program into smaller pieces.
* Describe the role of formal and actual parameters of a function.
* Describe how strings and arrays are allocated, manipulated and used.
* Compare iterative and recursive solutions for elementary problems such as factorial.
* Formulate loop invariants for simple loops.
* Demonstrate loop termination.
* Implement, test, and debug simple recursive methods.
* Explain the philosophy of object- oriented design and the concepts of encapsulation, abstraction, inheritance, interface and polymorphism.
* Describe how the class mechanism supports encapsulation and information hiding.
* Compare and contrast the notions of overloading and overriding.
* Identify the scope of the variables involved in a given code.
* Access and program databases using various classes.
* Design GUI programs.
* Implement version control.
* Construct class diagram, aggregation, and collaboration.
* Describe the significance and benefits of version control.
* Learn basic version control, assess the role of Git and create online repositories using Git.
* Describe the basic Junit framework, Design effective unit test cases for Java lasses in Junit Execution Environment.
* Design class diagrams which describe the structure of a system by modeling its classes, attributes, methods and relationships among objects.

## METHODS OF INSTRUCTION:

Offline face-to-face lecture and in-class lab/quiz.

## MEANS OF ASSESSMENT:

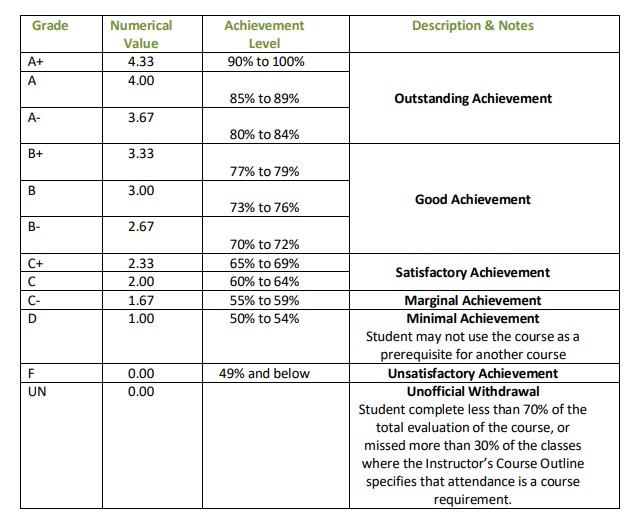
### The student’s achievement will be converted to a letter grade, in accordance with department policy. A student is required to produce his or her ID card during examinations.

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| Assignments | 20% |
| Quiz | 20% |
| Midterm Exam | 25% |
| Final Exam | 35% |
| TOTAL | **100%** |

Notes:

* ***If you miss more than 30% of the scheduled classes, you will* receive** [**UN Grade**](https://www.douglascollege.ca/sites/default/files/docs/finance-dates-and-deadlines/Grading%20Policy%20May%202019.pdf) **for your course grade.**
* **In order to pass the course, students must, in addition to receiving an overall course grade of 50%, also achieve a grade of at least 50% on the combined weighted examination components (including quizzes, tests, and exams).**
* **Student must obtain a min C grade in CSIS1175 before they can register in CSIS1275.**

## GRADING POLICY:



## REGULATIONS FOR STUDENTS:

Late assignments: Late assignments/labs will not be graded and receive an automatic zeromark except for extraordinary circumstances or prior arrangements with the instructor. Students are encouraged to keep extra copies (i.e., photocopies or file backups) of their assignments in case of data loss in the digital world.

Missed tests or final examination: Student will receive a zero mark for any missed test(s). Exceptions may be considered in cases of extraordinary circumstances such as accidents, deaths in the family, family emergencies’ including sick children. It is the responsibility of the student to inform the College and/or the instructor at the earliest reasonable opportunity. Notification of the possibility of missing the test or exam must be done prior to the test or exam date/time and based on the instructor's preference might require supportive documentation where applicable.

## Classroom Civility and Shared Responsibility:

Student Conduct: Any student who displays disruptive or dangerous behavior will be asked to leave the classroom/lab by the instructor. Such behavior will be classified as misconduct. Reprimands and appeals will be exercised according to the [Douglas College Student Conduct policy](https://www.douglascollege.ca/sites/default/files/docs/A20%20Standards%20of%20Student%20Conduct.pdf).

Timeliness: *S*tudents are expected to be in class at the start of class. Any late student should enter the session and try to not interrupt the flow of class activity as per [Douglas College Student Conduct policy](https://www.douglascollege.ca/sites/default/files/docs/A20%20Standards%20of%20Student%20Conduct.pdf).

Class Cancellation: If a class is cancelled due to unforeseen circumstances, a notification will be made through Blackboard to every student enrolled in the course. It is the responsibility of students to be proactive and to check their announcements and/or e-mail before coming to class. Every effort will be made to ensure that the notification is made as soon as possible.

Illness and other unavoidable circumstances: Except in extraordinary circumstances, quizzes, tests, exam and assignment deadlines must be adhered too. If unable to attend or submit, advance notice must be provided via email at your earliest opportunity. On the email include

- Course and section number (e.g., CSIS2175-006)

- Your name and student number (e.g., Student Number 212121212)

- Late assignment or missed quiz (e.g., Missed Term Test #1)

- Brief comment (e.g., Explanation of reasoning)

Without documentation such as a doctor’s letter, the instructor will discuss the most appropriate course of action that will lead to fair evaluation of your overall learning in the course. Students must use their Douglas College email account to communicate with the instructor and communication must be in English.

Preparation, Attendance and Participation: Attendance will be taken on a regular basis. The method of delivery includes classroom discussion and lab exercises; and students need to be present to participate and to learn.

Student Effort:In addition to the scheduled times for classes and labs, students are expected to spend at least 10 hours a week on this course. If you are consistently spending more time than this, consider speaking with your instructor or reaching out to the [Accessibility Centre](https://www.douglascollege.ca/student-services/student-support/accessibility-services) for assistance.

Academic Integrity Any student who hands in a program (exam or assignment) that is similar in style as in another program submitted by other student(s) in the same or previous semesters will be considered as cheating in exam / assignment. College policy on academic integrity will be applied against all those students involved, including the one who gives out his program to others.

Academic Integrity Policy can be found at:

https://www.douglascollege.ca/-/media/27C599ABC76048A0A713648565906273.ashx

**This following schedule is tentative and subject to change, as per the College policy.**

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| Please do not make any travel arrangements during the final examination period – final exam scheduling is beyond the instructor’s control. Please see the Registrar’s office immediately with any conflict(s).  **COURSE SCHEDULE: Tentative and subject to change as seemed necessary**   |  |  |  | | --- | --- | --- | | **WEEK** | TOPICS AND ACTIVITIES | **READINGS and ITEMS DUE** | | Week 01 | * Introduction * Java Fundamentals | **Chapter 1 & 2**  **Appendix C**  **Class Exercises** | | Week 02 | * Decision Structures | **Chapter 5**  **Class Exercises** | | Week 03 | * Loops * Files | **Chapter 6 & 13**  **Class Exercises Assignment #1 DUE** | | Week 04 | * Classes   **Quiz #1 Covered in Weeks 01-03** | **Chapter 3 & 4**  **Class Exercises** | | Week 05 | * Continuation for Classes | **Chapter 3 & 4**  **Class Exercises** | | Week 06 | * Arrays and Array List | **Chapter 8 & 9**  **Class Exercises** | | Week 07 | * Introduction to basic Search and Sorting algorithm   **MID-TERM EXAM Covered in Weeks 01-06** | **Class Exercises** | | Week 08 | * Text Processing and Wrapper Classes | **Chapter 7**  **Class Exercises**  **Assignment #2 DUE** | | Week 09 | * Continuation for Text Processing * Inheritance, Abstract classes and Interfaces | **Chapter 7 & 10**  **Class Exercises** | | Week 10 | * Continuation for Inheritance, Abstract Classes and Interfaces | **Chapter 10 & 11**  **Class Exercises** | | Week 11 | * Exceptions and Advanced File I/O   **Quiz #2 Covered in Weeks 07-10** | **Chapter 12**  **Class Exercises** | | Week 12 | * GUI and Event Handling | **Chapter 14 & 15**  **Class Exercises Assignment #3 DUE** | | Week 13 | * Database Programming | **Chapter 22**  **Class Exercises** | |  | **FINAL EXAM Covered in Weeks 07-14** |  |   **Please check the examination schedule as soon as it becomes available for potential scheduling conflicts. Do NOT make any travel arrangements during this examination period. Final Exam is mandatory.** |