Algoma University
Department of department name
COSC 1046W
Introduction to Computer Science
2024 Winter Term
3 hours/Tuesday, A102

Instructor Information
Instructor: Ping Luo
Office: TBD
Office Hours: Tuesday 2:30 – 3:00pm
E-mail: ping.luo@algomau.ca

Lab instructor: Ping Luo, Davinder Kaur
There are 10 labs, each carrying 2 marks. Labs start from the second week.

Course Information
Course Calendar Description:
In conjunction with COSC1047, this course fulfils the first-year requirements for B.Sc. and BCOSC majors in Computer Science. Emphasizing a fast-paced learning environment, this course encompasses comprehensive problem-solving exercises, a substantive introduction to programming, and a survey of key mathematical concepts foundational to Computer Science. Throughout the curriculum, the Java programming language will be utilized, providing students with proficiency in an object-oriented programming environment.

Course Prerequisites:
There is no other prerequisite for this course, and previous programming experience is not required.

Learning Outcomes:
Upon completion of this course, students will be able to:

- *Understand the structure and components of the Java programming language.*
- *Utilize common software components and IDEs to create, compile, run and test Java programs.*
- *Use the operating system of the computer to manage files and programs during the development process.*
- *Analyze complex problems involving multiple data types, including objects, Strings, arrays, and multiple types of control structures, and describe a solution to the problem in pseudocode.*
- *Understand the context of the programming process within the field of Computer Science.*

Learning Objectives
This course aims to:
- *Enable students to enhance their problem-solving abilities by applying computational thinking and problem-solving techniques.*

- *Equip students with proficiency in the Java programming language, emphasizing its relevance and utility in modern computing environments.*
- *Introduce students to the principles of Object-Oriented Programming, allowing them to understand and apply OOP concepts in program development.*
- *Lay the groundwork for advanced studies by preparing students for second-year courses.*

Required Textbook(s):

Introduction to Java Programming and Data Structures, Comprehensive Version, 12th Edition
By: Y. Daniel Liang

Print, ISBN: 9780136520238, CAD$241.00 https://www.bkstr.com/algomastore/product/introduction-to-java-programming-and-data-structures--comprehensive-version-938848-1

or,
12 Months eBook, ISBN: 9780137554768, CAD $54.99 https://www.pearson.com/en-ca/subject-catalog/p/introduction-to-java-programming-and- data-structures/P20000003470/9780137554768

or,
Loose Leaf: ISBN-10: 0136520154 CDN $115.41
https://www.amazon.ca/Introduction-Programming-Structures-Comprehensive- Version/dp/0136520154

Course Requirements and Assessment

Information on course requirements and assessments.

Assessment	Weighting
Quizzes	20%
Labs	20%
Mid-Term Exam	25%
Final Exam	35%
Total	100%

Late Assignments
Late assignments will receive a grade of 0, except in cases of valid medical issues supported by a doctor's note.

Missed Tests and Exams:
Missed tests and exams will receive a grade of 0, except in cases of valid medical issues supported by a doctor's note.

The Final Examination Policy can be found at:
http://algomau.ca/media/styleassets/pdf/final_examination_policy.pdf

Class Schedule

Jan 9 (Week 1): Introduction to Computers, Programs and Java^{TM}
Introduction to the course and the learning objectives.

Jan 16 (Week 2): Elementary Programming
Data types, variables, constants, assignments, expressions, and operators.

Jan 23 (Week 3): Selections
Conditional statements.

Jan 30 (Week 4): Mathematical Functions, Characters, and Strings
Common mathematical function, string operation.

Feb 6 (Week 5): Loops
While, do-while, for loop.

Feb 13 (Week 6): Methods I
Define methods with parameters.

Feb 20 (Week 7): Study Break
No Lecture and Lab

Feb 27 (Week 8): Methods II
Method overloading.

Mar 5 (Week 9): Recursion
Describe what a recursive method is and the benefits of using recursion.

Mar 12 (Week 10): Single-Dimensional Arrays
Array operations.

Mar 19 (Week 11): Multidimensional Arrays

Mar 26 (Week 12): Objects and Classes
Brief introduction to object-oriented programming.

Apr 2 (Week 13): Review

Apr 8 - 23: Official final examination period for 2024 Winter term

Academic Dishonesty:
The University takes a very serious view of such offences as plagiarism, cheating, and impersonation. Penalties for dealing with such offences will be strictly enforced.

The following web site contains a complete policy statement on academic dishonesty and attendance. Students are encouraged to read this policy for further clarification of these issues:
http://algomau.ca/media/styleassets/pdf/disciplinary_regulations_on_academic_dishonesty.pdf

Electronic Device Policy:
Instructor's policy on electronic devices

Attendance Policy:
The general regulations of the University require punctual and regular attendance at the various academic exercises. If there are extenuating circumstances related to an absence, the instructor should be notified. Absences in excess of 20% may jeopardize receipt of credit for the course.
Disability Accommodation:

If you are a student with a physical, learning, and/or psychological disability and plan to request any academic accommodations for this class, you are required to bring in an authorization letter from Disability Services listing the permitted accommodations. I will work with you to arrange your accommodations from the point in time that you deliver and discuss such an authorization letter with me. The Coordinator of Disability Services will keep your disability documentation confidential. Contact information is as follows: Coordinator of Disability Services 705-949-2301 ext. 4221; learning@algomau.ca