The Hong Kong University of Science and Technology

UG Course Syllabus (Fall 2025-26)

[Course Title] Java Programming

[Course Code] COMP 3021

[No. of Credits] 3-credit

[Any pre-/co-requisites] Prerequisite(s): COMP 2012 OR COMP 2012H

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Course Description

Introduction to Java programming. Fundamentals include language syntax, object-oriented programming, inheritance, polymorphism, exception handling, multithreading and lambdas. Standard libraries for input/output, graphics programming, built-in data structures. Programming for events, generics and higher-order functions.

List of Topics

Classes and Objects
Java Development Tools (IntelliJ)
String Processing and Text Input/Output
Inheritance and Polymorphism
Interfaces and Inner Classes
Unit Testing
Exceptions
Generic Programming
Lambdas and functional programming
Event Handling and GUI programming
Multithreading

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. An ability to develop programs in Java.
   1.1 Be able to implement object-oriented concepts in Java.
   1.2 Be able to organize, compile and deploy Java program files.
   1.3 Be able to program Java exceptions.
   1.4 Be able to define generic functions and classes in Java.
2. An ability to use Java packages in programming
   2.1 Be able to design and implement multi-threaded Java applications.
   2.2 Be able to design and implement event handlers in Java.
   2.3 Be able to design and implement functional interfaces.
3. An ability to apply tools and practices for Java programming.
   3.1 Be able to design and implement unit test cases in a unit testing framework.

3.2 Be able to follow good Java programming practices.
3.3 Be able to use an integrated development environment for Java application development.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

[List specific assessed tasks, exams, quizzes, their weightage, and due dates; perhaps, add a summary table as below, to precede the details for each assessment.]

Assessment Task	Contribution to Overall Course grade (%)	Due date
Lab Participation	5%	Weekly
Lecture Participation	5%	Weekly
Assignments	(15%,15%,15%) 45%	TBA
Final examination	45%	TBA

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

The lab and lecture grades will be given based on your participation. You are allowed to miss one in-lecture exercises for the whole term without penalty.

Special Bonus

If you can point out any ***technical error related to Java programming rules*** in course website (by week 2), lecture slides (before the corresponding lectures), and the assignment specification (by one week after the assignment release), you are rewarded 0.5 point of the total course grade for a maximum of 2 points per person.

Mapping of Course ILOs to Assessment Tasks

[add to/delete table as appropriate]

Assessed Task	Mapped ILOs	Explanation
Lab Participation	ILO1, 2, 3	Lab practices all aspects of the course
Lecture Participation	ILO1	Lecture mostly teaches theory
Assignments	ILO1, 2, 3	Assignment is the major vehicle for delivering the outcome
Final Exam	ILO1	Exam is paper based and theory oriented

Grading Rubrics

Grading is decomposed into the following components: Commit & Style Check, Public Tests , Private Tests, Bonus Task

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Course AI Policy

Gen-AI is not allowed for the completion of any of the assignments.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include specific details, e.g., strengths, areas for improvement. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

N/A

Required Texts and Materials

N/A

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Additional Resources

Reference books

- Introduction to Java Programming and Data Structures: Comprehensive Version, Y Daniel Liang. Pearson, c2019, 11th Edition.
- Introduction to Java Programming and Data Structures: Comprehensive Version, Y Daniel Liang. Pearson, c2019, 11th Edition.
- Java SE 8 for the Really Impatient, Cay S. Horstmann, Addison-Wesley Professional, c2014, 1st Edition.
- Java 8 in Action: Lambdas, streams, and functional-style programming, Raoul-Gabriel Urma, Mario Fusco and Alan Mycroft, Manning Publications, c2014, 1st Edition.
- Core Java: Volume I - Fundamentals, Cay S. Horstmann, Prentice Hall, c2019, 11th Edition.
- Core Java: Volume II - Advanced Features, Cay S. Horstmann, Prentice Hall, c2019, 11th Edition.