[Course Title] Java Programming Bridging Course

[Course Code] COMP 1029J

[No. of Credits] 1 Credit

[Exclusion(s)] COMP 1022P, COMP 3021, ISOM 3320

[Prerequisite(s)] COMP 1002 OR COMP 1004 OR COMP 1021 OR COMP 1022Q OR ISOM 3230

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**Course Description**

This course introduces the Java programming language. It is intended for students who already have some experience in computer programming but wish to learn how to apply those programming skills to the Java language. The course covers basic programming topics such as variables, control statements, loops, functions, and object-oriented programming concepts. Students explore these by self-learning of course materials together with guided programming exercises. Students without the prerequisites but possess relevant programming knowledge may seek instructor's approval for enrolling in the course. Graded P or F.

**List of Topics**

Introduction to Java
- Using Java and BlueJ
- Variables and Data Types
- Basic Java Operators
- Text Input and Output

Essential Programming in Java
- Using Strings
- Making Decisions
- Loops
- Functions

Object-oriented Programming and Arrays
- Basic Object-oriented Programming
- Using the Main Function
- Arrays

Advanced Topics
- File Input and Output
- Recursion
- Inheritance

Greenfoot

- Using Greenfoot
- Creating a Player
- Creating an Enemy
- Making a Game

**Intended Learning Outcomes (ILOs)**

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

1. Define basic programming elements such as variables, control, loops and functions in Java
2. Describe object-oriented programming concepts in Java
3. Describe data structures and data abstraction in Java
4. Design, write and debug computer programs in Java

**Assessment and Grading**

This is a P/F course. P grade will be assigned to students who have achieved the online exercises and final examination passing requirements.

| Assessment Task | Passing Requirements |
|---|---|
| Online exercises | Achieved 60% or higher |
| Final examination | Achieved 40% or higher |

**Assessments:**

| Assessment Task | Contribution to Overall Course grade (%) | Due date |
|---|---|---|
| Online exercises | 50% | Every Friday from 04/07/2025 to 25/07/2025 |
| Final examination | 50% | 30/07/2025 |

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

**Mapping of Course ILOs to Assessment Tasks**

| Assessed Task | Mapped ILOs | Explanation |
|---|---|---|
| Exercise for Lesson 2 | ILO1, ILO4 | This task assesses students' ability to define basic programming elements such as variables, control, loops and functions in Java (ILO 1), design, write and debug computer programs in Java (ILO 4). |
| Exercise for Lesson 3 | ILO1, ILO2, ILO4 | This task assesses students' ability to define basic programming elements such as variables, control, loops and functions in Java (ILO 1), describe object-oriented programming concepts in Java (ILO 2), design, write and debug computer programs in Java (ILO 4). |
| Exercise for Lesson 4 | ILO1, ILO2, ILO3, ILO4 | This task assesses students' ability to define basic programming elements |

| | | such as variables, control, loops and functions in Java (ILO 1), describe object-oriented programming concepts in Java (ILO 2), describe data structures and data abstraction in Java (ILO 3), design, write and debug computer programs in Java (ILO 4). |
|---|---|---|
| Exercise for Lesson 5 | ILO1, ILO2, ILO3, ILO4 | This task assesses students' ability to define basic programming elements such as variables, control, loops and functions in Java (ILO 1), describe object-oriented programming concepts in Java (ILO 2), describe data structures and data abstraction in Java (ILO 3), design, write and debug computer programs in Java (ILO 4). |
| Final examination | ILO1, ILO2, ILO3, ILO4 | This task assesses students' ability to define basic programming elements such as variables, control, loops and functions in Java (ILO 1), describe object-oriented programming concepts in Java (ILO 2), describe data structures and data abstraction in Java (ILO 3), design, write and debug computer programs in Java (ILO 4). |

**Grading Rubrics**

The following rubrics outline the criteria used to evaluate each ILO, applicable to all assessment tasks involving these ILOs.

| Criteria | Pass | | | | Fail |
|---|---|---|---|---|---|
| | **Excellent** | **Good** | **Satisfactory** | **Needs Improvement** | **Unsatisfactory** |
| Understanding of Basic Elements | Clearly defines and effectively uses variables, control structures, loops, and functions in Java. | Defines and uses basic elements with minor errors. | Basic definitions are present, but application is inconsistent. | Limited definitions and frequent errors in usage. | Fails to define or use basic programming elements. |
| Object-oriented Programming Concepts | Explains fundamental concepts (classes, objects, inheritance and interfaces) with examples. | Covers most concepts with some examples. | Describes some concepts, but lacks depth or relevant examples. | Minimal description with significant gaps in understanding. | Fails to describe concepts accurately. |
| Data Structures and Abstraction | Provides clear descriptions and effectively | Describes data structures with minor | Basic descriptions of data structures; | Limited understanding of data | Fails to describe or |

| | uses data structures and abstraction techniques in Java. | inaccuracies; some application present. | application is minimal. | structures; few applications. | apply data structures. |
|---|---|---|---|---|---|
| Design, Writing, and Debugging | Designs, writes, and debugs programs with exceptional clarity and efficiency. | Generally designs and writes clear programs; debugging is mostly effective. | Programs are functional but lack clarity; debugging is minimal. | Poor program design and writing; debugging efforts are ineffective. | Fails to design, write, or debug programs. |

**Final Grade Descriptors:**

| Grades | Short Description | Elaboration on subject grading description |
|---|---|---|
| P | Pass | 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. |
| 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**

The use of generative artificial intelligence is not allowed in all assessment tasks.

**Communication and Feedback**

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include detailed scores in various tasks and their grading criteria. 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**

Resubmission is not permitted for the course.

**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**

Online course content to be published in HKUST canvas when the semester begins.