**Course Objective and Outcome Form**

Department of Electrical and Computer Engineering

School of Engineering and Physical Sciences

North South University, Bashundhara, Dhaka-1229, Bangladesh

1. **Course Number and Title:** CSE 215 Programming Language II
2. **Number of Credits:** 3
3. **Type:** Core
4. **Prerequisites:** CSE 115 (Programming Language I), CSE 173 (Discrete Mathematics)
5. **Contact Hours:** 3 hours (theory)
6. **Course Summary:** This course introduces the basic concepts and techniques of object oriented programming. Actual computer programs are constructed by apply object oriented programming concepts and using an OOP language. Java is primarily chosen as the programming language in this course. The following topics are covered in this course: Java syntax with elementary programming, primitive data types, strings, operators, statements, arrays and methods, introduction to OOP, classes and objects, constructor, polymorphism, abstract classes and interfaces, file IO operations, handling exceptions in Java, GUI, multithreading, generics and related concepts
7. **Course Objectives:** The objectives of this course are to
8. to become use to the basics of elementary programming such as variables, conditional and iterative execution, arrays and methods in Java;
9. to understand the attributes of object oriented programming (encapsulation, polymorphism, etc.) and concepts of OOP such as method overloading, method overriding, static and dynamic binding, abstract class, interface, visibility modifiers;
10. to design a programming solution using the object oriented programming concept, and apply the concepts of exception handling, graphical user interface (GUI), event-driven programming, multi-threaded programming, generics in Java;
11. to introduce Java SDK and Java IDE tools to develop Java applications with debugging;
12. to work in a project team to support as a team member to develop applications.
13. **Syllabus**
14. **Fundamentals of Programming (6 Lectures) - Mostly From Liang’s Book**
15. Introduction of Java
16. Elementary Programming
17. Selection Structures
18. Loops
19. Methods
20. Single and Multi-Dimensional Arrays
21. **Object Oriented Programming (12 Lectures) - Mostly from Herbert Schildt’s Book**
22. Introducing Classes
23. A Closer look at Methods and Classes
24. Inheritance
25. Abstract Classes, Packages and Interfaces
26. Exception Handling
27. **Additional Topics (6 Lectures) - (Mostly from Herbert Schildt’s Book)**
28. Multithreaded Programming
29. Generics
30. Event Driven Programming
31. Applets
32. **Resources**

**Text books:**

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| No | Name of Author(s) | Year of Publication | Title of Book | Edition | Publisher’s Name | ISBN |
| 1 | Herbert Schildt | 2018 | Java The Complete Reference | 11th. | Oracle Press | 9781260440249 |
| 2 | Y. Daniel Liang | 2015 | Intro to Java Programming, | 10th. | Pearson | 9780133761313 |

**Reference books:**

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| --- | --- | --- | --- | --- | --- | --- |
| No | Name of Author(s) | Year of Publication | Title of Book | Edition | Publisher’s Name | ISBN |
| 1 | Deitel and Deitel | 2017 | Java How to Program | 11th | Pearson | 978-0134743356 |

1. **Weightage Distribution among Assessment Tools**

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| **Assessment Tools** | **Weightage (%)** |
| Quizzes and Class Performance | 30 |
| Midterm | 30 |
| Final Exam | 40 |

1. **Grading policy:** As per NSU grading policy available in

<http://www.northsouth.edu/academic/grading-policy.html>