**Course Outline of CSE 111: Programming Language II**

**Semester:  Summer 2019**

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| **Instructor Information:**  Annajiat Alim Rasel (AAR)  Office # UB80710  Email: annajiat@bracu.ac.bd | **“Everybody in this country should**  **learn to program a computer,**  **because it teaches you how to think”**  **- Steve Jobs , co-founder and CEO of**  **Apple Inc. (1955 - 2011)** |

**Course Description:** This course would be an introduction to data structures, formal specification of syntax, elements of language theory and mathematical preliminaries. Other topics that would be covered are formal languages, structured programming concepts, survey of features of existing high level languages. Students would design and write application using an appropriate language. The course includes a compulsory 3 hour laboratory work each week.

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| **Pre-requisites:**  CSE110: Programming Language I / CSE161+CSE162 **Co-requisites:** None |

**Course Outcomes:**

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| CO 1 | **Recognize** the fundamental syntax of OOP Programming Language and basic concepts of loops. |
| CO 2 | **Retell** the fundamental concepts of collections. |
| CO 3 | **Explain** the fundamental concept of OOP (Object Oriented Programming). |
| CO 4 | **Differentiate** various aspects of OOP. |
| CO 5 | **Identify** different types of Access Modifiers. |
| CO 6 | **Discuss** the fundamental concepts of inheritance and method overloading. |
| CO 7 | **Discuss** the fundamental concepts of polymorphism and dynamic method dispatch. |
| CO 8 | **Illustrate** class design using inheritance and polymorphism concept. |
| CO 9 | **Demonstrate** the design of abstract class and the usage of interface. |
| CO 10 | **Discuss** the concept of exception handling. |

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| **Course Outlines** | | | **Course Assessment Methods** |
| **Sl** | **Topic details** | **Week** | **Homework**: Homework/ assignment shall be designed to ensure that the students have the required knowledge to recognize, analyze, design and apply Object Oriented Programming Concepts to solve programming problems. Specifically, they will support the students’ progress in the Laboratory.  **Quizzes**: Quizzes will be designed to test the students' understanding in the course and to assess various course outcomes.  **Examinations**: The exam shall contain problems designed to measure the ability and knowledge of the student to recognize, analyze, design and apply Object Oriented Programming Concepts to solve programming problems.  **Laboratory** Work: The students will solve problems related to using and implementing OOP concepts in the Lab using an appropriate language. The students will be assessed during each Lab session via Lab performance and Lab submissions in each Lab Session. |
|  | Introduction to problem solving | Week 1 |
|  | Review of programming basics | Week 2 |
|  | Objects and Classes | Week 3, 4 |
|  | Access Specification | Week 5 |
|  | Midterm and Review | Week 6 |
|  | Method Overloading, Inheritance | Week 7 |
|  | Polymorphism, Dynamic method dispatch | Week 8 |
|  | Practice | Week 9 |
|  | Abstract Class and Interface | Week 10 |
|  | Exception handling | Week 11 |
|  | Review | Week 12 |

**Assessment Methods vs. Course Outcomes:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Assessment Methods** | **CO 1** | **CO 2** | **CO 3** | **CO 4** | **CO 5** | **CO 6** | **CO 7** | **CO 8** | **CO 9** | **CO 10** |
| Homework | X | X |  |  | X |  |  |  |  | X |
| Quizzes |  |  |  | X |  | X | X |  | X |  |
| Examinations | X | X | X | X | X | X | X | X | X | X |
| Laboratory Works | X | X | X |  |  |  |  | X | X |  |

**Textbook:**

# The Java Language Specification by James Gosling, Bill Joy, Guy L. Steele Jr., Gilad Bracha, Alex Buckley

ISBN-13: 978-0133900699,

http://www.oracle.com/technetwork/java/api-141528.html

https://docs.oracle.com/en/java/javase/

https://docs.oracle.com/javase/specs/

# The Java Tutorial by Raymond Gallardo, Scott Hommel, Sowmya Kannan, Joni Gordon, Sharon Biocca Zakhour

ISBN-13: 978-0134034089

http://download.oracle.com/javase/tutorial/getStarted

**Supporting Tools:** Lecture Notes and other material are available at \\TSR\CSE\CSE111\_MSA\ and \\TSR\CSE\Annajiat

**Course Policies:**

Class Policy

* Classroom and laboratory attendance are mandatory. You should come to the classroom before the instructor. Late comers may/ may not be allowed to enter the classroom. Students, who are absent over 30% of the class time will not be allowed to enter the final examination hall.
* You should turn off your cellular phone before entering the classroom. You should not leave the classroom to make or take cellular phone calls
* You should bring a notepad and/or a writing instrument to every class and take detailed notes.
* You should pay attention to the instructor and participate in class discussions.
* You should not do other work during class time.

Honor Code: Any form of cheating, plagiarism, and/or academic dishonesty will result in an "F" grade in the course.

Late Work and Examinations: Late assignments may not be accepted. Students who know that they are going to miss class should make arrangements in advance. Exams will be closed book. There will not be any make-up for quizzes and midterm exams except the cases of hospitalization or detention

**Grading Policies:**

Student’s grades are assigned according to the grading scale of the Brac University Undergraduate Study and Examinations Regulations. In addition, the faculty are allowed to take into consideration the class average and standard deviation to reflect the actual class performance for student grade assignment. The grades at the university will be indicated in the following manner:

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| **Marks** | **Grades** |
| 90-100 | A (4.0) |
| 85- <90 | A- (3.7) |
| 80- <85 | B+ (3.3) |
| 75- <80 | B (3.0) |
| 70- <75 | B- (2.7) |
| 65- <70 | C+ (2.3) |
| 60- <65 | C (2.0) |
| 57- <60 | C- (1.7) |
| 55- <57 | D+ (1.3) |
| 52- <55 | D (1.0) |
| 50- <52 | D- (0.7) |
| <50 | F (0.0) |
| P | Pass |
| I | Incomplete |
| W | Withdrawal |
| R | Retaken |

**Course Assessment Methods:**

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| **Section** | **Marks (%)** |
| Participation in class | 5 % |
| Quizzes/Class Tests/Assignments | 20 % |
| Mid Term Examination | 20 % |
| Lab including Lab Assignments | 25 % |
| Final | 30 % |
| **Total** | **100 %** |

**Date:** 13 May 2019

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