SYLLABUS

DIVISION: Business and Engineering Technology   **REVISED:** Fall 2014

CURRICULA IN WHICH COURSE IS TAUGHT: **Gaming and Mobile App and Programming**

COURSE NUMBER AND TITLE: **ITP 120 – Java Programming I**

CREDIT HOURS: 4 **HOURS/WK LEC:** 4 **HOURS/WK LAB:** 0 **LEC/LAB COMB:** 4

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I.   CATALOG DESCRIPTION: Entails instruction in fundamentals of object-oriented programming using Java. This course emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface (GUI) applications.

II.   RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:
- Introduce students with the concepts of object oriented language; encapsulation,
- inheritance and polymorphism
- Learn Java programming language
- Use it to create console program as well as GUI applications.

III.   REQUIRED BACKGROUND: ITP 100

IV.   COURSE CONTENT:
- Introduction to Computers and Programming Languages
- Primitive types, Strings and interactive I/O
- Flow Control
- Class, Method, Polymorphism and Encapsulation
- Inheritance
- Arrays
- Exception Handling and debugging
- AWT and swing

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE.

  X   Communication   **X**   Critical Thinking
       Cultural and Social Understanding   **X**   Information Literacy
       Personal Development   **X**   Quantitative Reasoning
       Scientific Reasoning

VI.   LEARNER OUTCOMES   VII.   EVALUATION

Introduction to Computers and Programming Languages • Learn the history of computers • Understand the difference between low level and high level programming languages • Understand difference between procedural languages and object- oriented language • Understand the basics of computer hardware • Learn to write a simple java program	Lab exercises Written test
Primitive types, Strings and interactive I/O • Understand the primitive types of Java • Learn to declare the variables of primitive types • Learn to use the arithmetic operators and precedence rule • Understand the assignment compatibilities of primitive types and type casting • Understand String class and its methods • Learn interactive I/O using J Option-Pane class	Lab exercises In class assignments Written test
Flow Control • Understand flow chart and pseudocode • Understand Boolean expressions and Boolean variables • Understand if – else statement (one branch, two branches and many branches) • Understand switch statement • Understand while, do … while and for loops	Lab exercises In class assignments Written test
Class, Method, Polymorphism and Encapsulation • Understand instance variables and class variables • Learn to define a method and invoke the method • Understand instance methods and class methods • Learn to design methods – top down design. • Understand overloading methods • Understand constructors and overloading constructors	Lab exercises In class assignments Written test

• Understand Encapsulation • Learn to use Accessor and Mutator methods	
Inheritance • Understand inheritance basics • Understand Overriding methods • Understand the use of the final modifier in methods and class • Understand the use of the abstract modifier in methods and classes	Lab exercises In class assignments Written test
Arrays • Understand array basics • Learn to declare and use one dimensional array • Understand the effect of using array elements as parameter to methods • Understand the effect of using array as parameter to methods • Learn to declare and use multidimensional arrays	Lab exercises In class assignments Written test
Exception Handling and debugging • Understand the basics of exception handling • Learn to define and use exception classes	Lab exercises In class assignments Written test
AWT and Swing • Understand the AWT package • Learn the difference between AWT and swing • Learn to write simple programs using AWT • Learn to write simple programs using swing	Lab exercises In class assignments Written test