



**Purpose:** It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

**Course Title** - Programming Fundamental I

**Course Prefix and Number** - COSC 1436

**Department** – Computer Science

**Division** – Technology & Business

**Course Type:** (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y  or N )

**Semester Credit Hours #: Lecture Hours #: Lab/Other Hours #:** 4:3:2

**Equated Pay hours for course** - 4

**Course Catalog Description** - This course introduces the fundamental concepts of structured programming using Java, and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. This course is included in the Field of Study Curriculum for Computer Science.

List Lab/ Other Hours
Lab Hours 2
Clinical Hours 0
Practicum Hours 0
Other (list) 0

**Prerequisites/Co-requisites** – TSI Math and Reading

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**Date:** 07/29/2014

**Reviewed by Department Head:** Donna Schilling

**Date:** 6/24/2015

**Accuracy verified by Division Chair:** David Kucera

**Date:** 8/12/15

**Approved by Dean or Vice President of Instruction:** Leigh Ann Collins

**Date:** 12-18-15



**I. Topical Outline** – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non-lecture instruction):

- **Introduction to Computers and Java**, Computer Hardware and software, Programming Languages, The Programming Process
- **Java Fundamentals**: Data Type, Arithmetic operations, Variables declarations, print and println methods, Reading keyboard input using Scanner Class and input dialog box, and String class.
- **Decision Structure**: if statements, switch Statements, logical Operators, Comparing String Objects, and the printf Method.
- **Loops and files**: while Loop, do-while Loop, for loop, nested loop, Random class, and introduction to file input and output.
- **Methods**: defining and calling a method, passing arguments to a method, passing object references to a method, returning a value from a method, and Local variable.
- **Classes**: classes and objects, instance fields and methods, constructors, overloading methods and constructors, and packages and import Statements.
- **GUI Applications**: AWT and Swing, creating Windows, Layout Managers, Labels, Text boxes Button, Radio Buttons, check Boxes, and Borders
- **Arrays**: Declaring and initializing an array, passing and returning an array to/from method, string array, Arrays of Objects, two dimensional arrays, Multidimensional arrays.

**II. Course Learning Outcomes**

This course incorporates the National Workforce Center for Emerging Technologies Programming/Software Engineering skill standards recognized by the Texas Skill Standards Board.

Learning Outcomes	Methods of Assessment
<p><b>Upon successful completion of this course, students will:</b></p> <ol style="list-style-type: none"> <li>1. Describe how data are represented, manipulated, and stored in a computer.</li> <li>2. Categorize different programming languages and their uses.</li> <li>3. Understand and use the fundamental concepts of data types, structured programming, algorithmic design, and user interface design.</li> <li>4. Demonstrate a fundamental understanding of software development methodologies, including modular design, pseudo code, flowcharting, structure charts, data types, control structures, functions, and arrays.</li> <li>5. Develop projects that utilize logical algorithms from specifications and requirements statements.</li> <li>6. Demonstrate appropriate design, coding, testing, and documenting of computer programs that implement project specifications and requirements.</li> <li>7. Apply computer programming concepts to new problems or situations.</li> </ol>	<p>All outcomes will be assessed by one or more of the following:</p> <p>Individual Programming Projects            Tests and Quizzes            Final Exam</p>

**III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.**

Tony Gaddis, Starting out with Java From Control Structures Through Data Structure, second Edition, Addison Wesley, ISBN # 10: 0-13-54586-9  
USB Storage Drive  
High-speed Internet Connection

**IV. Suggested Course Maximum - 20**

**V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.**

Computer for each student with jdk-7 and JGRASP

**VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course**

50% - Labs, Projects  
50% - Midterm & Final Exam

**Grading System –**

100 -90	= A
89 - 80	= B
79 - 70	= C
69 - 60	= D
and below	= F

**VII. Curriculum Checklist**

- **Academic General Education Course** (from ACGM – but not in WCJC Core)  
No additional documentation needed

- **Academic WCJC Core Course**  
Attach the Core Curriculum Checklist, including the following:

- Basic Intellectual Competencies
- Perspectives
- Exemplary Educational Objectives

- **WECM Courses**  
If needed, revise the Program SCANS Matrix & Competencies Checklist.