COSC 1436 SPRING 2017 Date: 1/31/2017 **NAME: _____**

Project Description

This *individual or team programming* project is worth 25% of your total grade (100 points for scoring purposes). Team project requirements include election of a team leader who reports member participation.

Item	Points Possible
Part (1) – Design/Documentation	20 points (or 5% of total grade)
Part (2) - Implementation	80 points (or 20% of total grade)

Please note that this project must be unique in its design and implementation. You are not to copy or use any part of a Java project that was previously submitted or appears on the Internet, in a textbook, or otherwise made available via an external source. Apply computer programming concepts to new problems or situations. Your project must utilize logic algorithms from specifications and requirements statements. Contact your instructor if you have any questions regarding these requirements.

DELIVERABLES:

- **PART 1: Design/Documentation (20 points). Minimum requirements.**

1. **Project Description – *Executive Summary*** (5 points).

   Provide a ½ to 1 page overview of your project identifying the major components as part of a Java program design. The format is an executive summary to be presented to management for review. Suggested sections include introduction, recommendations, and justification. Include brief specifications and requirements statements.

   Note: No third-party software function library is permitted.

2. **Structured, valid, efficient, commented code** with a reasonable level of code content. Demonstrate coding standards presented in the textbook. (5 points).

3. **This form** with all *blanks* filled in. *(5 points).*

4. **Documentation** (5 points). One or more of the following: diagram (UML, etc.), flow chart, pseudocode, documentation generated via documentation-generator such as *javadoc*, documentation - any format, external, User Guide, specifications, requirements, etc. Note: You can use Microsoft Visio, Word, or Access as a diagramming tool. Please obtain approval regarding the use of other diagramming tools.

- **PART 2: Implementation (80 points) Minimum Requirements.**

1. **Interface** (10 points). One or more of the following:
   A. Graphical User Interface (ex: using Java Foundation Classes)
   B. Dialog Boxes (ex: using jOptionPane class)
   C. Text (ex: using Java API classes: ex.: print & println methods)

   Identify selected interface(s): _____

2. **Array(s)** (10 points). One or more of the following:
   A. Primitive variable array
   B. Array of Objects
   C. Parallel arrays
   D. Two or more dimension array
   E. Array of Objects using `ArrayList` class

   Identify array type(s) / location(s): _____

3. **Class(es)** (10 points). Including:
   A. Constructor(s)
   B. Appropriate Accessor Method(s)
   C. Appropriate Mutator Method(s)

   Name(s) / location(s) of class(es): _____

   Names(s) / location(s) of object(s): _____

4. **Decision Structure(s)** (10 points). One or more of the following: If, If-else, Nested if, If-else-if, or Switch.

   Name(s) / location(s) of decision structure(s): _____

5. **Repetition Structure(s)** (10 points). One or more of the following: while, do-while, or for.

   Name(s) / location(s) of repetition structure(s): _____

6. **Sequential File I/O** (10 points total). One or more of the following:
   A. Writing and/or appending output to a file
   B. Reading file as input

   Name(s) / location(s) of file structure(s): _____

7. **Method(s)** (10 points total). One or more of the following:
   A. Value-returning method
   B. Void method

   Name(s) / location(s) of method(s): _____

8. **Math class fields or methods** (10 points total). One or more Math class fields or methods, or the Java API `Random` class.

   Name(s) / location(s) of Math class field(s) or method(s): _____

   LINK TO MATH CLASS DOCUMENTATION: https://docs.oracle.com/javase/7/docs/api/java/lang/Math.html