

CSCI 135 – Fundamentals of Computer Science I

Exam II Study Outline

I. Dictionaries

A. Operations

1. Creation
2. Accessing
3. Updating

B. Sets

1. Set Operations

II. Functions

A. Library Functions

B. User Defined Functions

1. Parameters
 - a. Pass by Value
2. Return Values
4. Variable Scope

B. Flow of Control

C. Calling a Method

III. Graphics and Audio

A. File Input

B. StdDraw

1. Drawing simple shapes
2. Drawing images
3. Manipulating the output window (canvas)
4. Animation
5. Keyboard and mouse input

C. StdAudio

1. Playing sounds
2. Manipulating sound files

IV. Classes

A. Creating your own data types

1. Classes
2. Objects
3. Constructors
4. Attributes (state)
5. Methods (behavior)
6. Lists of objects

B. self

C. Client Programs

V. Problem Decomposition

A. Software Development Life Cycle

1. Understand the Problem – Specification
 - a. Looking at input and output first
2. Work out the Logic – Design

3. Convert it to Code – Programming
 4. Test / Debug
 5. Maintenance
- B. Object Oriented Analysis
1. Find the nouns
 2. Determine attributes
 - a. Refine
 3. Determine methods (verbs + CRUD)
 4. UML Diagrams
 5. Refine until code-able
 - a. API – Application Program Interface