

School of Computer Science

Course Title:
Computer Programming II

Date: October 3, 2007

Course Number: COP 3337

Number of Credits: 3

Subject Area: Programming	Subject Area Coordinator: Jai Navlakha email: navlakha@cis.fiu.edu
Catalog Description: : SCS Web page	
Textbook: Big Java by Cay Horstmann	
References:	
Prerequisites Courses: COP 2210 & MAD 2104	
Corequisites Courses: None	

Type: Required

Prerequisites Topics:

- Be familiar with Objects & Classes
- Be familiar with methods, method parameters, and parameter passing
- Master fundamental Java data types
- Master selection and iteration control structures
- Be familiar with using String, ArrayList, and Wrapper classes

Course Outcomes:

- O1. Master the design and implementation of classes using I inheritance and polymorphism
- O2. Master the use and implementation of interfaces
- O3. Be exposed to writing recursive methods
- O4. Be familiar with the implementation of linked list data structures
- O5. Be familiar with the Stack & Queue data structures
- O6. Be exposed to the Java Collection interface
- O7. Master analyzing problems and writing Java program solutions to those problems

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Outline

Topic	Number of Lecture Hours	Outcome
<ul style="list-style-type: none"> • Review of Java Basics <ul style="list-style-type: none"> ○ Primitive types ○ Class types ○ Static objects and methods ○ Control structures ○ String, ArrayList & Wrapper Classes 	6	
<ul style="list-style-type: none"> • Text I/O <ul style="list-style-type: none"> ○ BufferedReader ○ FileReader 	1	
<ul style="list-style-type: none"> • Introduction to Inheritance <ul style="list-style-type: none"> ○ Object class 	2	O1 & O7
<ul style="list-style-type: none"> • Data Abstraction <ul style="list-style-type: none"> ○ Implement data type classes ○ Constructors ○ Override equals, hashCode and toString 	5	O1 & O7
<ul style="list-style-type: none"> • Interfaces <ul style="list-style-type: none"> ○ Implementing the Comparable interface ○ Implementing the Comparator interface ○ Collection class 	3	O2 & O7
<ul style="list-style-type: none"> • Inheritance & Polymorphism <ul style="list-style-type: none"> ○ Extending classes ○ Overloading and overriding methods ○ Polymorphism 	7	O1, O2 & O7
<ul style="list-style-type: none"> • Exceptions 	1	O1 & O7
<ul style="list-style-type: none"> • Recursion <ul style="list-style-type: none"> ○ Stack Frames 	4	O3 & O7
<ul style="list-style-type: none"> • Introduction to Data Structures <ul style="list-style-type: none"> ○ Collection interface ○ Stacks ○ Queues ○ Implementing linked lists 	9	O4,O5,O6 & O7

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Course Outcomes Emphasized in Laboratory Projects / Assignments

Outcome	Number of Weeks
O1	2 assignments 4 weeks
O2	1 assignment 2 weeks
O3	1 assignment 2 weeks
O4,O5,O6	1-2 assignments 2-4 weeks

**Oral and Written Communication:
None**

**Social and Ethical Implications of Computing Topics:
None**

Approximate number of credit hours devoted to fundamental CS topics

Topic	Core Hours	Advanced Hours
Algorithms:	0.5	
Software Design:	1.0	
Computer Organization and Architecture:	0	
Data Structures:	0.5	
Concepts of Programming Languages:	1.0	

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**Theoretical Contents:
None**

Problem Analysis Experiences

6 assignments

Solution Design Experiences

6 assignments

**The Coverage of Knowledge Units within Computer Science Body of
Knowledge¹**

Knowledge Unit	Topic	Lecture Hours
PF1	Text I/O	1
PF3	Introduction to Data Structures	9
PF4	Recursion	4
PF5	Event Driven Programming	1
PL6	Object Oriented Programming	14

¹See <http://www.computer.org/education/cc2001/final/chapter05.htm> for a description of Computer Science Knowledge units