COURSE DESCRIPTION
Spring 2017

SCHOOL OF INFORMATICS AND COMPUTING
INDIANA UNIVERSITY
Bloomington

CSCI-C212/A592 – Introduction to Software Systems

Class Number:	5273/5264 & 12315/12314
Term:	Spring 2017 – January 9th to May 5th
Meeting Time:	8:00am to 9:15am & 9:30am to 10:45am on Mondays and Wednesdays
Meeting Location:	Wylie Hall (WY) 005
Course Website:	Canvas (https://canvas.iu.edu)
Instructor:	Adeel Bhutta
Office Phone:	(812) 855-3147
Office Location:	Lindley Hall, 201D
Email:	aabhutta@indiana.edu
Office Hours:	Monday to Thursday from 11:00am to 12:00pm or by appointment

Course Description
4 Credit Hours: Design of computer software systems and introduction to programming in the environment of a contemporary operating system. Topics include a modern object-oriented programming language; building and maintaining large projects; and understanding the operating system interface. Lecture and laboratory. Credit given for only one of CSCI-C 212, H 212 or A 592 or ENGR-E 111.

Pre-requisite Course(s): CSCI-C200 or C211

Required Textbook and Reference Books
The following textbook will be used for this course:
- *Big Java* by Cay Horstmann, 6th edition, ISBN 978-1-119-05644-7, John Wiley

The following textbook can be used *for reference*:
- *Java How to Program (Early Objects)* by Paul Deitel & Harvey Deitel, 10th Edition, ISBN-13: 978-0133807806, *Pearson*

Learning Objectives
At the end of the course, every student should be able to design and develop medium-sized programs for solving simple problems (not-involving advanced algorithms and data-structures) either individually or in collaboration with a team. The tools and technologies the student should be reasonably proficient in using include object-oriented programming style, simple graphics, basic operating system concepts and commands, and debuggers.

The course also aims to teach students how to become independent self-regulated learners and how to survive and even strive in an ever-changing world of overabundant and sometimes conflicting resources.

This course will help students to achieve the following objectives:
- Understand components of programming languages including control structures, names, types, objects, exceptions, etc.
- Understand an object oriented programming language and concepts of software design and development.
- Demonstrate skill in using software development methodology to design and implement object oriented software systems.

Course Work-Load Expectations

Federal regulations define a credit hour in the amount of work as 'no less than one hour of class room instruction' and 'a minimum of two hours out of class student work' per week for 15-week semester. The credit hour definition is a minimum standard and it does not restrict an institution from setting a higher standard that requires more student work per credit hour.

*For this 4-credit hour 15-week course you should be prepared to spend a minimum of 8-12 hours per week outside of lectures. It is not uncommon for students to spend (on average) **10+** hours per week.*

Important Dates

- Semester Starts: January 9th
- **Martin Luther King Jr. Day**: January 16th
- Midterm Exam 1: Monday February 13th (in-Class)
- Withdrawal Deadline (*with Automatic W grade*): March 12th
- **Spring Break**: March 13th - 17th
- Midterm Exam 2: Monday March 27th (in-Class)
- Semester Ends: April 28th
- **Final Exams:**
  - Friday, May 5th (2:45pm-4:45pm) @ Jordan Hall 124 - *for both sections*

Grading Scheme

Attendance	5%
Quizzes	10%
Assignments / InClass_Exr	15%
Labs	20%
Project	10%
Midterm Exams (2)	20%
Final Exam	20%

Grading Scale

Score	Letter Grade
90–92.9, 93-96.9, 97-100	A-, A, A+
80–82.9, 83-86.9, 87-89.9	B-, B, B+
70–72.9, 73-76.9, 77-79.9	C-, C, C+
60–62.9, 63-66.9, 67-69.9	D-, D, D+
0 – 59.9	F

Class Communication

This is a face to face class and the primary medium of communication will be lectures. We will also use Canvas to post important class-related information and messages. *It is the responsibility of the student to check their **IU** emails and Canvas website regularly*.

Reading Assignments

Regular textbook reading and practice is the *single most important factor* to enhance student learning and getting good grades in this course. The list of reading topics is given in course outline. Advanced reading is HIGHLY RECOMMENDED

Class & Lab attendance is REQUIRED

Attendance is extremely important and has direct correlation with your understanding of the subject as well as the final grade. Students are expected to attend all classes/labs. If a student is absent, it is the responsibility of the student to obtain lecture notes from Canvas or other colleagues. *Any student absent from the lab will not receive any grade for that lab.*

Weekly Laboratory / Assignments / Quizzes / Project

Lab assignments are designed to provide an opportunity to write programs as well as document your work and results, and will closely follow the topics covered in class on weekly basis. Additional assignments, projects and quizzes **will** also be assigned during the course.

Late Policy

No late submissions will be allowed for weekly labs and projects in this course. Assignments may be submitted late without permission but will incur a late penalty of 25% deduction per day. *Any course module submitted (labs and projects - after the original deadline; assignments - after 4 days) will not receive any credit*. No work will be accepted after the last day of the semester.

Makeup Work

There will only be ONE makeup opportunity for labs (detailed will be announced in class). No other makeup of assignments, exams and project will be allowed in the class. If you have a University-approved excuse (which includes *illness or injury, family emergencies, university approved curricular and extracurricular activities, and religious holidays*), please contact the instructor / associate instructor immediately.

Email Communication with the Instructor and AIs

Communicate with your instructor or Associate Instructors by e-mail. Allow 24 hours for a reply. The response time during the weekend may be longer than 24 hours. The contact information and office hours for Instructor and AIs is provided on Canvas (and at the start of the syllabus).

Individual Work, Research and Plagiarism

All course assignments, discussions, quizzes or exams are assigned for individual work. No group work is permitted unless specifically allowed. Students are encouraged to engage in discussion or use other resources (such as research papers, library books or internet articles) but must write their own answers and provide references to the resources used. At any time, student must not reproduce code/answers from other resources (as is or cosmetic changes) and the answers must not be shared. *Any plagiarism (even partial work) or cheating on home works, assignments, quizzes, projects and exams is NOT acceptable and will result in an immediate failure for the class*

***WARNING**: The Source Code submitted must be your own and must not be taken from any other resource (including online forums or solution manuals). Barely changing the variable and function names in someone's code is not sufficient and will be considered plagiarism.*

***Disclaimer:** The instructor reserves the right to make any changes to the syllabus any time during the term.*

Class Schedule and Weekly outline

2017	Topics	Labs / Assignments	Quizzes	Reading Assignment
1 Week of 01/09	Syllabus & Policies Writing the first Java Program!	Lab1: Hello World!	Quiz1	Chapter 1
2 Week of 01/16	*MLK Day (No Class on Monday)* Variables, Assignments, Operators	Lab2		Chapter 2, 4
3 Week of 01/23	Introduction to Objects Input / Output, Strings	Lab3 / Assignment1	Quiz2	Chapter 2, 4
4 Week of 01/30	Decisions / Loops	Lab4	Quiz3	Chapter 5, 6
5 Week of 02/06	Arrays and ArrayList Objects & Classes	Lab5 / Assignment2	Quiz4	Chapter 7, 3
6 Week of 02/13	Midterm Exam 1 Designing Classes	Lab6	Quiz5	Chapter 8
7 Week of 02/20	Inheritance and Polymorphism	Lab7 / Assignment3	Quiz6	Chapter 9
8 Week of 02/27	Object Oriented Design	Make up Week # 1	Quiz7	Chapter 12
9 Week of 03/06	Interfaces ***Employer Panel Discussion (Wed)***	Lab8		Chapter 10
	Spring Break			
10 Week of 03/20	Event Handlers and GUI	Lab9 / Assignment4	Quiz8	Chapter 10, 20
11 Week of 03/27	Midterm Exam 2 Input / Output and Exception Handling	Lab10		Chapter 11
12 Week of 04/03	Java Applets, Recursion	Lab11	Quiz9	Ch3 Notes & Chapter 13
13 Week of 04/10	Java Collections Framework	Lab 12 ***Project Phase I Due*** Make up Week # 2	Quiz10	Chapter 15
14 Week of 04/17	Generic Classes, Tree Structures	Lab13 / Assignment5	Quiz11	Chapter 18, 17
15 Week of 04/24	Sorting & Searching	***Final Project Due***	Quiz12	Chapter 14
Week of 05/01	**Final Exam**			

Note: This course outline was last updated on 4/19/2017 and will be updated on weekly basis.