

Spring 2023

## CS 602: Java Programming

Donald Hsu

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CS 602-104: Java Programming, Saturday 9:00 – 11:50 am, KUPF Room 105

Instructor: **Donald Hsu, PhD**, [yanyou@hotmail.com](mailto:yanyou@hotmail.com), Office: Saturday 8:30 - 9:00 am

**Course Description** --- Students learn how to create and deploy Java Programming. Topics are: Classes, Objects, OOP, Files Streams, Swing, Data Structures & JDBC. Hands-on exercises and programming projects are required.

**Course Learning Outcomes:**

After completion of the course, students will be able to:

- Learn object-oriented programming, encapsulation, inheritance, and polymorphism
- Create Java programs via integrated development environments
- Understand control statements, logical operators, array and lists
- Create files, stream, Lambda, XML serialization
- Develop client-server application with database component
- Write multithreaded programs with synchronization
- Implement advanced features: networking and sockets, Java database connectivity, multi-threading, Swing & AWT, JavaFX and JShell

**Textbook: Java, How to Program**, Late Objects, 11<sup>th</sup> Edition, Paul Deitel and Harvey Deitel, ISBN#978-01347-91401, Pearson, Upper Saddle River, NJ (2018)

Grading: **Attendance/active participation -- 30%, Homework -- 34%, Final Project -- 36%**

1/21/2023	Chap. 1 Introduction to Computers, the Internet and Java
	Chap. 2 Java Application Input, Output, Operations
1/28	Chap. 3 Control Statement, Part I: Assignment, ++ and – Operators
	Chap. 4, Control Statement, Part II: Logical Operators, assign HW#1
2/04	Chap. 5, Methods, Chap. 6. Arrays and ArrayLists
2/11	Chap. 7, Class and Objects, Chap. 8 Classes and Objects: A Deeper Look
2/18	Chap. 9, Object-Oriented Programming: Inheritance, HW#1 due
2/25	Chap. 10, Object-Oriented Programming: Polymorphism and Interface

	Chap. 11, Exception Handling: A Deeper Look, assign HW#2
3/04	Chap. 12, Java FX Graphical User Interface: Part I
	Chap. 13, Java FX GUI, Part II
3/11	Chap. 14, Strings, Characters, Regular Expressions
	Chap. 15, Files, Input/Output Streams, NIO and XML Serialization
3/18	Spring Recess, no class
3/25	Chap. 16, Generic Collections
	Chap. 17, Lambdas and Streams, HW#2 due
4/01	Chap. 18, Recursion, assign Final Project
4/08	Chap. 19, Searching, Sorting and Big Om
	Chap. 20, Generic Classes and Methods: A Deeper Look, assign HW#3
4/15	Chap. 21, Custom Generic Data Structure
	Chap. 22, JavaFX Graphics, Animation and Video
4/22	Chap. 23, Concurrency
	Chap. 24, Accessing Databases with JDBC
4/29	Chap. 25, JShell: Java 9 for Interactive Java, HW#3 due
5/06	Final Project Presentation

**NJIT Honor Code** --- Violations of the honor code will be dealt with seriously and reported immediately to the Dean of Students.

Late Policy --- Late Homework **will not be accepted**.

Prerequisites ---- Python, C, C++ or permission of the instructor