Course Syllabus Part I
CSD 420 Advanced Java Programming

3 credit hours

Course Description
This course builds on previous Java programming experience and focuses on advanced programming concepts. Topics include threading, graphics, Java Database Connectivity (JDBC), and Model View Controller (MVC). Students will continue developing skills in using agile development techniques. Students will be introduced to the MySQL database management system (DBMS).

Course Prerequisites
CSD 402 and CSD 310.

Course Skills
- Write programs saving and accessing data in files and databases
- Understand and work with recursive methods
- Create and manage collections
- Use JSON
- Work with creating and managing multiple threads

Course Objectives
1. Evaluate text and binary Input/Output for storing application data.
2. Compose and use collections holding primitives and objects for data management.
3. Define the benefits of generic classes and interfaces for building useful methods and data collections.
4. Integrate databases and database management systems to meet application requirements.

Grading Scale

Letter Grade	Percentage Grade	Letter Grade	Percentage Grade
A	≥ 92.5%	C	< 76.5% and ≥ 72.5%
A-	< 92.5% and ≥ 89.5%	C-	< 72.5% and ≥ 69.5%
B+	< 89.5% and ≥ 86.5%	D+	< 69.5% and ≥ 66.5%
B	< 86.5% and ≥ 82.5%	D	< 66.5% and ≥ 62.5%
B-	< 82.5% and ≥ 79.5%	D-	< 62.5% and ≥ 59.5%
C+	< 79.5% and ≥ 76.5%	F	< 59.5%

Topic Outline

I. Binary I/O
   A. Random-Access Files
   B. Text I/O vs Binary I/O
II. Recursion
III. Generics
   A. Benefits
   B. Backward Compatibility
IV. Collections
   A. Lists
   B. Stacks
   C. Queues and Priority Queues
   D. Sets
   E. Maps
V. JavaFX
   A. Events
   B. Controls
VI. Threads
VII. JDBC
   A. Drivers
   B. ResultSet
   C. Modifying and Retrieving data
   D. Statements and Connections
VIII. JSON
   A. Languages Supporting JSON
   B. Advantages and Disadvantages

This syllabi update reflects grading scale policy updates effective 4/1/2024.