NorthWest Arkansas Community College
Business & Computer Information Systems Division
Computer Information Department Course Outline

PROG 2413 JAVA PROGRAMMING II (F)

Catalog Description
This course is a continuation of PROG 1403 (Java Programming I). After a review, the student is introduced to more advanced programming concepts essential for students seeking a career in software development. Topics include: Object oriented programming and design, database access, lists, queues, trees, hash tables, graphs, recursion, and searching / sorting algorithms. Bit O notation will also be discussed.

Prerequisites
PROG 1403 Java Programming I or Instructor Approval

Credit hours/Contact hours/Load hours
3/3/3

Target Audience/Transferability
This course is for students seeking training in application development, and is applicable to students seeking self-improvement or an AAS Degree in Computer Information.

Student Learning Outcomes
The student will:
- Identify, explain and apply intermediate to advanced features (e.g. packages, interface, exceptions, generics) and the necessary syntax of the Java programming language to solve a given problem.
- Identify, explain and apply the fundamental abstract data types and Java implementations of arrays, lists, queues, hash tables, trees.
- Identify, explain, and apply searching, sorting, and generic algorithms (e.g. greedy, dynamic, divide-and-conquer)
- Describe the running time of algorithms using Big O notation.
- Determine the Big O notation of user defined functions.
- Create a program to read / write / update a given set of data to / from a database

Topics
- Object oriented design and methodology
- Database access with CRUD (Create, Retrieve, Update, and Delete)
- Data Structures – lists, tables, graphs, and trees.
- Algorithms for searching and sorting data.
- Big O notation
- Recursion

Forms of Assessment
Chapter quizzes or programs
Programming projects
Exams

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