Data Structures and Algorithms II – C950

Course Feedback

Overview
Data Structures and Algorithms II explores the analysis and implementation of high-performance data structures and supporting algorithms, including graphs, hashing, self-adjusting data structures, set representations, and dynamic programming. The course also introduces students to NP-complete problems. The course discusses how to use Python techniques to implement software solutions for problems of memory management and data compression. This course has one prerequisite: Data Structures and Algorithms I (C949).

Competencies
- Non-Linear Data Structures
  The graduate creates software applications that incorporate non-linear data structures for efficient and maintainable software.
- Hashing Algorithms and Structures
  The graduate writes code using hashing techniques within an application to perform searching operations.
- Dictionaries and Sets
  The graduate incorporates dictionaries and sets in order to organize data into key-value pairs.
- Self-Adjusting Data Structures
  The graduate evaluates the space and time complexity of self-adjusting data structures using big-O notation to improve the performance of applications.
- Self-Adjusting Heuristics
  The graduate writes code using self-adjusting heuristics to improve the performance of applications.
- NP-Completeness and Turing Machines
  The graduate evaluates computational complexity theories in order to apply models to specific scenarios.

Learning
Getting Started
Welcome to Data Structures and Algorithms II! This course uses the ZyBooks learning resource, which contains all the necessary reading materials and interactive learning activities. For the best understanding of the course content, complete each assigned module. To help you track your progress, we suggest you follow the pacing guide identified at the beginning of the course. Competency will be demonstrated by the successful completion of an objective assessment. Select the “Go to Course Material” button to begin.

Assessments
- Performance Assessment: Data Structures and Algorithms II
  Status: Not Attempted
  Code: NHP1
  PREVIEW