Academic Inquiries: Nanchang University
Email: iss@ncu.edu.cn

Nanchang University
CS209 Data Structure with Java

Credit: 4

Contact Hours

This course is composed of 24 lecture sessions, 3 tutorial sessions and 9 office contact hours. Each lecture session takes 2 contact hours in length; each tutorial session takes 3 contact hours in length;There will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours)at the end of this term. This course has 72 contact hours in total.

Course Description

This is a Java-based data structure course. Students will achieve an understanding of fundamental data structures and algorithms between different implementations of these abstractions. Topics to be covered include lists, stacks, queues, trees, searching and sorting algorithms.

Required Textbook

Textbook: *Data Structures and Abstractions with Java*
Author: Frank M. Carrano, Timothy M. Henry
Publisher: Pearson; 4
ISBN: 9780133744057

Grading

- Class Attendance 10%
- Quizzes 25%
- Lab 15%
- Mid-term Exam 20%
- Final Exam 30%

A+ 96-100	A 90-95	A- 85-89
B+ 82-84	B 78-81	B- 75-77
C+ 71-74	C 66-70	C- 62-65
D 60-61	F < 60	

Course Schedule

The course has 24 class sessions in total. All sessions are 2 contact hours in length. At the end of this term, there will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours).
Note: the course outline and required readings are subject to change.

Class 1:Algorithm Efficiency

Class 2:Growth Functions and Big-OH Notation

Class 3:Determining Time Complexity

Class 4:Stack Collection

Class 5:A Stack ADT

Class 6:Using Stacks: Evaluating Postfix Expressions

Class 7:Implementing a Stack: With Arrays

Class 8:A Queue ADT

Class 9:Using Queues: Code Keys

Class 10:Using Queues: Ticket Counter Simulation

Class 11:Implementing Queues: With Links

Class 12:Implementing Queues: With Arrays, Mid-term Exam

Class 13:A List ADT

Class 14:Using Ordered Lists: Tournament Maker & The Josephus Problem

Class 15:Implementing Lists: With Arrays & Links

Class 16:Lists in the Java Collections API

Class 17:Recursion

Class 18:Sorting and Searching

Class 19:Trees and Tree Traversals

Class 20:A Binary Tree ADT

Class 21:Using Binary Trees: Expression Trees

Class 22:Implementing Binary Trees with Links

Class 23:Implementing Binary Trees with Arrays

Class 24:Final Review

Attending Policy

Regular and prompt attendance is required. Under ordinary circumstances, you may miss two times without penalty. Each absence over this number will lower your course grade by a third of a letter and missing more than five classes may lead to a failing grade in the course. Arriving

late and/or leaving before the end of the class period are equivalent to absences.

Policy on "Late Withdrawals"

In accordance with university policy, appeals for late withdrawal will be approved ONLY in case of medical emergency and similar crises.

Academic Honesty

Nanchang University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating, and will also report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

General Expectations:

Students are expected to:

— Attend all classes and be responsible for all materials covered in class and otherwise assigned;

— Complete the day's required reading and assignments before class;

— Review the previous day's notes before class and make notes about questions you have about the previous class or the day's reading;

— Participate in class discussions and complete required written work on time;

— Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;

— While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

Special Needs or Assistance

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.