

OAKLAND UNIVERSITY
School of Engineering and Computer Science
Object Oriented Computing II
CSE 231 CSE 506, Winter 2017

Lecturer: Yonghong Yan

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Office Hours: Wednesday at 1:30 – 3:00PM or by appointment

Class Time and place: Tu, Th 10:00-11:47 DH 203

Teaching Assistant: Assad Maalouf

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Course Description:

A second course in programming, with emphasis on data abstraction and object-oriented design. The basic data structures in computer science, including stacks, queues, lists and trees, are covered in detail. Concepts of design, analysis and verification are discussed in the context of abstract data types. Examples of applications taken from numeric and symbolic domains are used. Prerequisite: CSE 230 or CIT 230.

4.000 Credit hours

4.000 Lecture hours

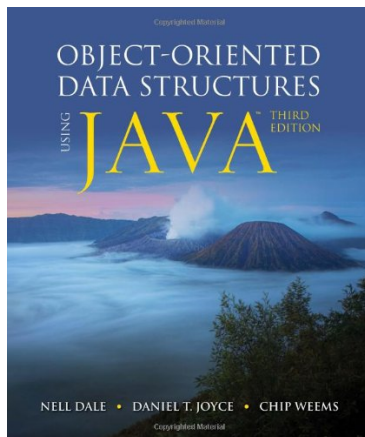
Prerequisite: CSE 230

Course Objectives:

1. Design Java programs using Abstract Data Types (ADT).(a,c,i,j,k)
2. Implement ADT using array-based and pointer-based representation.(a,c,i,j,k)
3. Implement/use linked lists, binary trees, stacks, queues, priority queues.(a,c,i,j,k)
4. Describe /use traversal, search and sorting procedures.(a,c,i,j,k)
5. Use recursion in ADT implementations.(a,c,i,j,k)
6. Describe concepts of and basic operations on hash tables and B trees.(a,c,i,j,k)

Note: (a,c,i,j,k) for each object are for contributions of the objectives to the program outcome

Textbook:



Object Oriented Data Structures using JAVA (3rd Edition), Nell Dale, Daniel Joyce and Chip Weems, *Jones and Bartlett Publishers*.

Grade Assessment:

Course grade will be a combination of homework, class participation, and midterm and final exams. Attendance is required for this class; students must be present in lecture for practices.

Homework (6)	50%
Attendance & Class Participation	5%
Midterm (Thursday 02/09 during the class)	20%
Final Exam (Thursday 04/20 8:00-11:00 AM)	25%

Behavioral Contract: (During lectures and class work)

- This class is offered in lab room with PCs and will include both lecture and lab practices; please read the following carefully, students will be asked to leave the labs if they do not follow this contract:
 - Digital devices such as: cell phones, tablets, ipod, mp3 players... etc need to be placed out of sight and must be set to silent. (I will keep my cell phone avail, for emergency preparedness)
 - No headphones are allowed.
 - Students are expected to use the PCs only for the CSE 231 class material. In other words, only the lecture slides; Moodle and your preferred IDE should be running on lab the PC.
 - Surfing the net for Social sites and being on Social Media are not allowed **during lecture hours and lab practices**, anyone who is not following this rule will be asked to leave the laboratory/lecture.

Attendance

- Attendance is required in all of the classes; it is part of a student's grade not an extra credit.
- Attendance is taken at the **beginning of class**. If you come in late (10 minutes after lecture starts), you will be logged in as **Late Arrival, 2 Late Arrival = 1 Absence** or if you choose to leave early (more than 10 minutes before the lecture ends), you will be logged as **Left Early. 2 Left Early = 1 Absence.**
- **If you miss more than 2 classes you will not receive any credit for attendance. (The 2 classes include excused absences.)**
- Class participation is part of your grade make sure to participate in our class practices.

Homework:

Most of the homework will be given as lab assignments that you can do it either in the lab or from home computer. For each assignment and after submission, students will go through an interview to answer questions and explain their program, so be prepared. Unless it is announced as teamwork, all assignments and class activities will be completed **individually**.

Late Policy: (PLEASE READ CAREFULLY)

Each assignment has a due date. The grade of any late work will be subjected to the following penalty: Each late day will cause 25% grade deduction, if the assignment is late more than 4 days then the grade is 0.

Moodle:

A session specific website is located at <https://moodle.oakland.edu/moodle>. This website will include all the course materials (notes, schedules, assignments, etc) for our course. Assignment will be available for download from this site, and they should be submitted using Moodle only. Please check this site often for updates.

Mid Semester Evaluations:

A mid semester evaluation will be conducted for all students registered in this course. For those students who are not achieving satisfactory progress (2.0) in this course at that point, an unsatisfactory grade (U) will be entered on SAIL.

Academic Conduct: *Expected conduct on assignments and exams*

Although students may discuss an assignment, each student should complete his or her assignment individually. Copying of another's assignment is not permitted. It is assumed that ALL work throughout the term is your own. Discussions during an exam or quiz are not permitted. Cheating during an exam or quiz is not permitted. It is assumed that ALL WORK THROUGHOUT THE TERM IS YOUR OWN! **Discussion of lab assignments are permitted but copying of assignments is not! Handing in a lab assignment or exam that was essentially copied from someone else does constitute as cheating.** All of the tests are closed book unless it was told otherwise. Obtaining help from notes, another individual or from hand held computing devices during an exam is regarded as cheating. The Oakland University Academic Conduct Policy can be found at <http://www4.oakland.edu/?id=1610&sid=75>. Cheating on examinations, plagiarism, falsifying reports/records, and unauthorized collaboration, access, or modifying of computer programs are considered serious breaches of academic conduct. The Oakland University policy on academic conduct will be strictly followed with no exceptions. See catalog under Academic Policies and Procedures.

Tentative Schedule:

Chapter 1	Introduction
Chapter 2	Abstract Data Type
Chapter 3	Stack ADT
Chapter 4	Recursion
Chapter 5	Queue ADT
Chapter 6	List ADT
Chapter 7	More List
Chapter 8	Binary Search Tree
Chapter 9	Priority Queue, Heap and Graph
Chapter 10	Sorting and Searching

Class	Date	Week day	Notes	Chapter	Assignment (out, due)
1	01/05	Thursday		1	
2	01/10	Tuesday		1	1 out
3	01/12	Thursday		2	
4	01/17	Tuesday		2	
5	01/19	Thursday		3	
6	01/24	Tuesday		3	1 due, 2 out
7	01/26	Thursday		4	
8	01/31	Tuesday		4	
9	02/02	Thursday		5	
10	02/07	Tuesday		5	2 due
11	02/09	Thursday	Midterm	1,2,3,4,5	
12	02/14	Tuesday		6	3 out
13	02/16	Thursday		6	
	02/21	Tuesday	Winter recess		
	02/23	Thursday	Winter recess		
14	02/28	Tuesday		6,7	3 due, 4 out
15	03/02	Thursday		7	
16	03/07	Tuesday		8	
17	03/09	Thursday		8	
18	04/14	Tuesday		8	4 due, 5 out
19	03/16	Thursday		8	
20	03/21	Tuesday		9	
21	03/23	Thursday		9	
22	03/28	Tuesday		9	5 due, 6 out
23	03/30	Thursday		9	
24	04/04	Tuesday		10	
25	04/06	Thursday		10	
26	04/11	Tuesday		10	
27	04/13	Thursday		10	6 due
28	04/18	Tuesday	Last class	Review	
	04/20	Thursday (8:00 - 11:00AM)	Final Exam		

Contributions of Course Objectives to Program Outcomes:

- a) An ability to apply knowledge of computing and mathematics appropriate to the discipline;
- b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
- c) An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;
- d) An ability to function effectively on teams to accomplish a common goal;
- e) An understanding of professional, ethical, legal, security, and social issues and responsibilities;
- f) An ability to communicate effectively with a range of audiences;
- g) An ability to analyze the local and global impact of computing on individuals, organizations and society;
- h) Recognition of the need for, and an ability to engage in, continuing professional development;
- i) An ability to use current techniques, skills, and tools necessary for computing practice;
- j) An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;
- k) An ability to apply design and development principles in the construction of software systems of varying complexity.

