CSC 301: Data Structures in Java II
Syllabus for Spring 2015-2016

Duru Turkoglu

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Course Description

This is the second course in a two-course sequence on data structures using Java. The course focuses mainly on the following data structures, their analysis, and their applications: trees (search trees, balanced search trees), heaps, associative arrays, hash tables, and data structures for representing graphs. The implementation of the basic operations on each data structure are discussed and analyzed in terms of their efficiency. The applications discussed highlight and exploit the unique characteristics of the different data structures, and emphasize problem solving and recursive thinking.

Prerequisite(s): CSC 300 Data Structures in Java I with a grade of C- or better.

Course Information

Instructor:	Duru Turkoglu, CDM 846 (243 S Wabash), 312-362-8127 `dturkogl(at)cdm(*)depaul(*)edu`
Schedule:	Section 601: TuTh 11:50am - 1:20pm, LEWIS 1110, Loop Section 602: TuTh 3:10pm - 4:40pm, LEWIS 1110, Loop Section 610: Online
Homepages:	http://condor.depaul.edu/dturkogl/courses/csc301/ http://d2l.depaul.edu/
Discussion Platform:	http://www.piazza.com/depaul/spring2016/csc301/
Office Hours:	Tuesdays 1:30pm - 3:00pm, CDM 846 Wednesdays 1:00pm - 2:30pm, CDM 846 Also by email appointments

Required Textbooks

- Algorithms, 4th edition by Robert Sedgewick and Kevin Daniel Wayne. This book has a great companion site. Do not get any prior edition! Available online via Safari.

- Think Java, How to Think Like a Computer Scientist by Allen B. Downey. This book is freely available online at the above link in pdf and in html formats.

Discussion Platform

The course discussion platform, is used for course announcements and class discussion. You **must** subscribe to the course discussion platform. Do it as soon as possible by visiting the address below:

http://www.piazza.com/depaul/spring2016/csc301/

The course discussion is an extension of our time in class. This is particularly great for students that miss the live lecture. If you are watching the class online, you should write down any questions that arise, including the time from the recording for reference. Whether you have questions from the recording or otherwise, post your questions on the discussion platform. Everybody is encouraged to discuss and reply to the questions, however, do not send messages that demonstrate non-academic or unprofessional attitude. Respect each other's opinions and do not send messages that are **not** related to the course. The instructor will be following up with a reply to each discussion or question as soon as possible, within 24 hours in general.

Objectives

The objectives of this course is to develop a permanent understanding of:

- Basic OO programming techniques

- Debugging and testing programs

- Analyzing correctness and performance

- Iterative and recursive solutions

- Trees

- Hash tables

- Graphs

- String algorithms

Assessment

- The course grade will be composed of:

Item	Weight
Homework assignments	15%
Project	5%
Online quizzes	10%
Midterm exam	30%
Final exam	40%

- There will be ten (8) homework assigments and two (2) online quizzes and one (1) project.

- The final exam will be comprehensive, i.e., will require knowledge of the material covered in the entire course. You must complete the final exam to pass the course.

- The grading scale will be as below, where pluses/minuses will be given at the high/low ends of each grade range.

Range	Letter
$90 \leq \ldots < 100$	A
$80 \leq \ldots < 90$	B
$70 \leq \ldots < 80$	C
$60 \leq \ldots < 70$	D
$0 \leq \ldots < 60$	F

Lecture Plan

The below lecture plan is tentative and subject to change as the course progresses.

Week	Date	Plan
1	Mar 28 - Apr 1	Symbol Tables (3.1, 3.5)
2	Apr 4 - 8	Binary Search Trees (3.2)
3	Apr 11 - 15	Binary Search Trees (3.2)
4	Apr 18 - 22	Balanced Search Trees (3.3)
6	Apr 25 - 29	Midterm - Graphs (4.1)
7	May 2 - 6	Undirected Graphs (4.1)
8	May 9 - 13	Directed Graphs (4.2)
5	May 16 - 20	Hash Tables (3.4)
9	May 23 - 27	String Algorithms (5.1)
10	May 30 - Jun 3	Tries (5.2)
11	Jun 6 - 10	Final Exam

Homeworks

1. Students will be receiving and submitting the homework assignments using the Git distributed version control system. Students will need to:

- Create a (free) personal BitBucket account.
- Install Git.
- Read the BitBucket tutorials:
  - https://www.atlassian.com/git/tutorial/git-basics
  - https://www.atlassian.com/git/tutorial/remote-repositories
- Accept the instructor's invitation on BitBucket and clone a local version of the repository to work on.

2. Students must verify that their homework has been submitted correctly, by logging in to the BitBucket web interface and checking that their modifications have been uploaded. Homework submissions must be submitted online via the Git repository. **Email submissions will not be accepted at all.**

3. Homework assignments are usually posted on Thursdays and are due by 11:59PM CST the following Thursday, a week after they are posted. Late submissions of up to 24 hours are allowed but they will incur a 10% penalty. **Homeworks submitted more than 24 hours late will not be accepted at all.**

4. Submitted work must be worked on individually. Students must not use or look at anyone else's solution, and must clearly acknowledge any code that is obtained from other sources (such as books, magazines, or the Internet). You may use as much code as you like (without acknowledgement) from the examples discussed in class. If in any doubt, contact the instructor well before the submission date for advice. Plagiarism will result in penalties up to and including failing the course.

5. Students must keep backup copies of all submitted homework.

Policies

Course Policies

1. Students in the lectured sections (601 and 602) must attend class.

2. Students in the online section (610) must watch the online recording within 48 hours of its publication online.

3. Students must subscribe to and follow the discussion platform in a timely fashion.

4. In class and online, students are strongly encouraged to ask questions and offer comments relevant to the course material.

5. All electronic interactions are an extension of the classroom and should be treated as such. While disagreement can be part of the discourse, online communication should remain respectful and appropriate rather than demeaning and/or unprofessional.

6. Lecture slides are a supplement to lectures only. The slides are not intended to be read in lieu of listening to the lecture.

7. Classroom use of a laptop or tablet must normally be restricted to class-related tasks such as note taking, checking references, testing code examples, etc.

Absence Notifications

Should a student need to be absent from class for a medical or personal reason, the Dean of Students Office can notify faculty of absences not exceeding five days. For additional information, please see: http://offices.depaul.edu/student-affairs/support-services/academic/Pages/absence-notification.aspx

The absence notification does not mean the student is excused from course material, assignments or exams. It is ultimately up to each professor to decide what, if any, accommodation can be provided in light of this absence. It is the student's responsibility to follow up with the faculty member to inquire about such accommodations.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at:
http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Exams

To maintain the academic integrity of its online courses, DePaul CDM requires that students registered in online sections complete proctored exams. Students registered in an on-campus section are not allowed to register for a proctored exam, and must take the exam with the on-campus section. For additional information, please see:
http://www.cdm.depaul.edu/onlinelearning/pages/onlinepolicies.aspx

Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. For additional information, please see:
http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the students identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: mailto:csd@depaul.edu

> Loop Campus — Lewis Center #1420, 25 E Jackson Blvd.
> Phone number: 312-362-8002
> Lincoln Park Campus — Student Center #370, 2250 N Sheffield Ave.
> Phone number: 773-325-1677
> Fax: 312 362 6544
> TTY: 773 325 7296

Withdrawal

Students who must withdraw from this course may do so by using the University's web registration system. For additional information, please see: http://offices.depaul.edu/depaul-central/academics/registration/Pages/withdrawal-policy.aspx.

Retroactive Withdrawal

This policy assists students for whom extenuating circumstances prevented them from meeting the withdrawal deadline. For additional information, please see:
http://www.cdm.depaul.edu/Current%20Students/Pages/Enrollment-Policies.aspx.