

Spring 2018: CIS 321 - Data and File Structures (4 Credits)

MWF 11:10-12:00. W 3:10-4. SN 338.

Instructor

Dr. Zhijun Wang.

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Office Hours: MW 1-3, WF 9-10, or by appointment.

Course Description

From the Catalog – The topics in this course include definitions and implementations of basic data structures including linked lists, stacks, queues, trees, and graphs and their applications; recursion as an algorithm design tool; and file organization and access techniques. Prerequisites: CIS 314, MATH 254, and MATH 205 or 207, or permission of instructor.

Mandated Goals/Learning Outcomes

- LEAP goal – Intellectual and practical skills throughout the curriculum.
- Learning outcomes – Critical thinking and creative thinking.

Specific Course Goals

- Learn fundamental data structures and their implementation methods.
- Get familiar with data structures provided by the Java API.
- Improve program design and implementation skills through practice.

Tentative Schedules

- Exam 1 – 1/31. Exam 2 – 2/21. Exam 3 – 3/28. Final exam – 12 – 2 pm on 4/25.
- Week 1 – 4. Java review. Array lists and linked lists. Algorithm efficiency. Generics.
- Week 5 – 7. Stacks, queues, priority queues, and their applications.
- Week 8 – 12. Recursion. Graph concepts. Trees. Binary trees. Heaps.
- Week 13 – 15. Sorting and searching. Sets, maps, and hash tables. Graphs.
- For detailed schedules and assignments with due dates etc., please visit <http://cs.planetapps.com/321.html>

Textbook

“Data Structures: Abstraction and Design Using Java” by Elliot Koffman and Paul Wolfgang, Wiley 2010. ISBN-13: 978-0470128701. Or the 2015 3rd edition.

Evaluations

- Assignments/Projects – 50%
No late assignment/project will be accepted without a documented excusable reason.
Due dates are posted on the course website. Please start early.

- Three Midterm Exams – 30%
The first missing midterm exam can be excused with an excusable reason such as an absence with a doctor's written notice. In this case the final exam carries its weight.
- Comprehensive Final Exam – 20%
A missing final exam receives a zero. No exception.
- Final Grade – A $\geq 90\%$, B $\geq 80\%$, C $\geq 70\%$, D $\geq 60\%$, F $< 60\%$.

Federally, HEPC, and Shepherd Mandated Policies

Disability Support Services

Disability Support Services at Shepherd University believes that every student should succeed, and works closely with students to meet their needs. Students requesting any disability related accommodation should contact the Disability Coordinator at 304-876-5122. This includes students with learning disabilities needing classroom accommodations, students requesting specific housing accommodations for health-related reasons, and all other disability accommodations. Accommodations need to be documented and provided to instructors. Please see <http://www.shepherd.edu/disability> for more information.

Academic Integrity

Each student in this course is expected to abide by the Shepherd University Academic Integrity Procedures in the Student Handbook – <http://www.shepherd.edu/conduct>.

Class Attendance

You must attend your classes regularly and engage in the requirements for each class; otherwise, your financial aid may be revoked either partially or in full. This would result in an amount due by you to the University immediately. Please refer to <http://www.shepherd.edu/financialaid> for more details.

Shepherd and CME Suggested Policies and Information

Free tutoring scheduling. Please refer to the academic support center's website at <http://www.shepherd.edu/academic-support/>.

Cell Phone and Text Messaging Policy – Please turn your cell phone off or put it in the silent mode. Please talk outside of the classroom if needed. No texting please.

Students in athletics – It is your responsibility to provide a letter signed by your coach listing all of the days in which you will be absent. Accommodations will be made only if the letter is received from your coach no later than the end of the first week of class.

The instructor reserves the right to update this syllabus, but only when necessary. In this case students will be notified in a reasonable and timely fashion.