Course Syllabus

# Course Prefix, Number, and Title:

CSC-300 Data Structures

# Credits:

3

# University Name:

Dakota State University

# Academic Term/Year:

Spring 2023

## Last date to Drop and receive 100% refund:

01/18/2023

## Last date to Withdraw and earn a grade of 'W':

04/03/2023

# Course Meeting Time and Location:

Online only

# Instructor Information:

## Name:

Chad Mitzel

## Office:

online

## Phone Number(s):

N/A

## Email Address:

chad.mitzel@dsu.edu

## Office Hours:

Typically available for calls/instant message/email after 5 pm EST

# Approved Course Description:

## Catalog Description:

A systematic study of data structures and the accompanying algorithms used in

computing problems; structure and use of storage; methods of representing data;

techniques for implementing data structures; linear lists; stacks; queue;  trees and tree

traversal; linked lists; and other structures.

# Prerequisites:

## Course Prerequisite(s):

CSC-250

## Technology Skills:

Students should be comfortable with the basic operation of their computer, including Windows 7 and Microsoft Office. A DSU issued tablet is required for on campus students, those that opt out are responsible for meeting the technology requirements.

# Course Materials:

## Required Textbook(s):

Algorithms Fourth Edition Robert Sedewick & Kevin Wayne

ISBN-13 978-0321573513

## Required Supplementary Materials:

None

## Optional Materials:

Provided on D2L

# Student Support:

## DSU Knowledge Base:

The DSU Knowledge Base contains links and resources to help students by providing information about the following topics: User Accounts & Passwords, Academic Tools & Resources, Software & Apps Support, WiFi & Network Access, Campus Emergency Alert System, Campus Printing, IT Security & Safe Computing, and the Support Desk (which is there to help both on and off-campus students). The Knowledge Base can be accessed through the link below:

* [DSU Knowledge Base](https://support.dsu.edu/TDClient/KB/)

## D2L Support for Students:

The D2L Support for Students site is designed to provide DSU students a D2L support resource center that contains user guides, tutorials, and tips for using the D2L learning environment. The D2L Support for Students site can be accessed through the link below:

* [DSU D2L Support Resources for Students](https://d2l.sdbor.edu/d2l/home/606414)

# Course Delivery and Instructional Methods:

This course will be delivered via sets of videos, slides, notes, and example programs. Class materials such as videos and lecture slides will be made available on D2L while example code and assignments will be distributed via Github.

# Classroom Policies:

## Attendance and Make-up Policy:

Being this is an online class there will not be any required classroom attendance. However, to pass this class, the students are expected to stay current with the class videos as they are posted and ensure they have viewed all and understand the material that is presented. All homework/quiz/lab/exam due dates are final and no late work will be accepted.

## Accessibility Statement:

Dakota State University strives to ensure that physical resources, as well as information and communication technologies, are reasonably accessible to users in order to provide equal access to all. If you encounter any accessibility issues, you are encouraged to immediately contact the instructor of the course and Dakota State University's ADA Office, which will work to resolve the issue as quickly as possible.

DSU's ADA Office is located in the Learning Engagement Center and can be contacted by calling 605-256-5121 or emailing [dsu-ada@dsu.edu](mailto:dsu-ada@dsu.edu). Students seeking ADA accommodations (such as non-standard note taking or extended time and/or a quiet space taking exams and quizzes) can log into the DSU portal to access <https://portal.sdbor.edu/dsu-student/student-resources/disability-services/Pages/default.aspx/> for additional information and the link to the Disability Services Request Form. You will need to provide documentation of your disability and the ADA Coordinator must confirm the need before officially authorizing accommodations.

## Academic Honesty Statement:

Cheating and other forms of academic dishonesty run contrary to the purpose of higher education and will not be tolerated in this course. Please be advised that, when the instructor suspects plagiarism, the Internet and other standard means of plagiarism detection will be used to resolve the instructor’s concerns. The South Dakota Board of Regents Student Academic Misconduct Policy can be found here: [SDBOR Policy 2.33](https://www.sdbor.edu/policy/Documents/2-33.pdf).

All forms of academic dishonesty will result in no credit on the assignment.

If you copy from another or allow another to copy from you, you have cheated. A formal acknowledgement that you violated academic integrity policies will be placed in your permanent academic records. If there is a second offense by the same student(s), they will fail the course. A list of forms of academic dishonestly is listed below; this list is not an exhaustive list that shows all possible forms of academic dishonesty, but is to be used as an example

**Possible forms of academic dishonesty**

* + Copying code from another student
  + Refactoring code from another student
  + Copying code from a website
  + Refactoring code from a website
  + Another person telling you what to type
    - **NOTE:** Tutoring is allowed, but proper tutoring does not involve the tutor telling you exactly what to type. If your DSU Tutor is practicing this technique, you should contact the instructor or the DSU Tutoring office with the name of the tutor.

**Acts that are *NOT* considered academic dishonesty**

* + Getting help from the instructor
  + Getting help from a DSU tutor
  + Getting help from an external tutor that follows the appropriate guidelines of tutoring
  + Using code that was presented in the lectures or provided by the instructor
  + Students that commit academic dishonesty also remove themselves from eligibility for any extra credit offered in the course. A formal acknowledgement that you violated academic integrity policies will be placed in your permanent academic records. If there is a second offense by the same student(s), the student(s) will fail the course at a minimum.

**NOTE:** Every assignment a student submits may be uploaded to Measure of Software Similarity (MOSS) for plagiarism and cheating detection. This software compares your submitted programs to those of other students' submitted programs, past and present, solutions to programs found online, and any other information sources the instructor sees fit.

# Communication and Feedback:

## Preferred Email Contact Method:

[chad.mitzel@dsu.edu](mailto:chad.mitzel@dsu.edu) should be used for any official questions regarding grades, missing class/coursework, class performance, etc. Please also send these types of questions from your institutional email address and put **[CSC300 SP23** in the subject line of the email.

## Email Response Time:

Responses will usually be within 24 hours but may be longer if contacted over a weekend or holiday. If you do not receive a response in that time frame, please send a follow up message

## Feedback on Assignments:

Students will usually receive feedback within one week after the due date. If feedback will be delayed, the students will be notified.

## Requirements for Course Interaction:

A course Slack channel has been created to support communication and interaction among the students in the class. This chat is intended for students to ask questions among one another and share interesting resources with each other. Questions regarding grades or personal issues should not be posted on this forum, they should instead be directly emailed to the instructor using DSU email.

# Student Learning Outcomes:

Students will be knowledgeable in ways with which to represent data in their programs and algorithms with which to interact with those representations. They will also have a fundamental understanding of the tradeoffs made when picking a certain data structure. The specific skills and competencies covered are listed in the topics section below.

# Evaluation Procedures:

## Assessments:

Students will complete hands on labs based upon the information delivered in lectures. Each student will be expected to complete each of the following types of activities during the course:

* + Biweekly checkup quizzes
  + Approximately 8 coding follow along exercises
  + Approximately 4 coding assignments
  + Midterm Test
  + Final Test

## Final Examination:

The final exam will be administered via a D2L quiz.

## Performance Standards and Grading Policy:

Students are expected to successfully complete all assigned labs and assignments, and correctly respond to all examinations given. Code that does not compile will be rewarded with a poor grade. Ensure your code compiles, use comments to describe what you are doing in the code, and use proper spacing. The lack of these three items will result in reduced points.

The course is weighted into the following categories:

* 50% - Assignments
* 15% - Tests (Midterm & Final)
* 15% - Biweekly Checkups
* 20% - Coding follow along exercises

The final letter grade will be based on the following scale and it not subject to being rounded.

* 90% <= grade 'A'
* 80% <= grade < 90% 'B'
* 70% <= grade < 80% 'C'
* 60% <= grade < 70% 'D'
* grade < 60% 'F'

## Student Verification Statement and Proctoring Policy:

Federal law requires that universities verify the identity of students when course materials and/or course assessment activities are conducted either partially or entirely online. A student’s Desire2Learn (D2L) login and password are intended to provide the student with secure access to course materials and are also intended to help the university meet this federal mandate. Some DSU Faculty also require the use of a proctor for exams in distance-delivered (Internet) courses and this requirement provides a second level of student identity verification. Students are responsible for any proctoring fees, if applicable. Finally, an instructor who uses web conferencing technology may require students to use a webcam during exams as another means of student identity verification through voice and visual recognition.

# Tentative Course Outline and Schedule:

| Week | Date | Topics, Assignments, Quizzes, Tests, Deadlines |
| --- | --- | --- |
| 1 | 01/09 | Class intro, Java and Git basics |
| 2 | 01/16 | Java programming overview |
| 3 | 01/23 | Linked list review & implementation |
| 4 | 01/30 | Stacks & Queues implementation |
| 5 | 02/06 | Continuing stacks & Queues |
| 6 | 02/13 | Analysis of Algorithms |
| 7 | 02/20 | Union Find Algorithm(s) |
| 8 | 02/27 | midterm |
| 9 | 03/06 | Symbol Table Introduction & Search Trees |
| 10 | 03/13 | Balanced Search Trees |
| 11 | 03/20 | Hash Tables |
| 12 | 03/27 | Undirected Graphs |
| 13 | 04/03 | Spring Break |
| 14 | 04/10 | Directed Graphs |
| 15 | 04/17 | Shortest Path Algorithms |
| 16 | 04/24 | Minimum Spanning Trees |
| 17 | 05/01 | Finals |

# Freedom in Learning Statement:

Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. It has always been the policy of Dakota State University to allow students to appeal the decisions of faculty, administrative, and staff members and the decisions of institutional committees. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.