WAYLAND BAPTIST UNIVERSITY

ONLINE CAMPUS

SCHOOL OF MATHEMATICS AND SCIENCES

## Wayland Mission Statement:

Wayland Baptist University exists to educate students in an academically challenging, learning-focused, and distinctively Christian environment for professional success and service to God and humankind.

## Course Title and Number:

CSCI 2313-FALL2ND8WKS; Data Structures

## Term:

Fall2 2022

## Name of Instructor:

Mr. Michael Wade Ashby

## Office Phone Number and WBU Email Address:

Michael.Ashby@wayland.wbu.edu

## Office Hours, Building, and Location:

Office hours will be virtual by appointment which can be set up by email. Through email we will determine the best platform for both of us to use to conduct the meeting.

## Class Meeting Time and Location:

Class will be completed in Blackboard.

## Catalog Description:

Comparative study of the interaction of data and procedural abstractions. Data structures, lists, stacks, queues, trees, graphs. Algorithms: searching, sorting, parsing, hashing, graph traversals.

## Prerequisites:

CSCI 1312

## Required Textbook and Resources:

Java Software Structures, 4th edition, John Lewis and Joseph Chase, Addison-Wesley; 2013, ISBN: 0133250121.

**Optional Materials:**

* A whiteboard to help draw out and think through problems
* A flash drive or cloud storage to back up files

## Course Outcome Competencies:

* Analyze, develop and implement an algorithm to solve mathematical and scientific problems.
* Select and use simple data types or data structures to solve a problem.
* Create classes based on verbal or written descriptions. Students will show competency by creating appropriate constructors, methods, and as needed operators and destructors.
* Recognize the need for and requirements of linked lists. Implement a simplistic linked list including methods to add, remove and retrieve elements.
* Recognize the need for and requirements of stacks and queues. Implement a stack or queue based upon a pre-existing linked list class.
* Explain the advantage of recursive code over iterative code as well as its disadvantages. Students will be able to write simple recursive functions and methods.
* Recognize the need for and requirements of binary trees. Implement a simplistic binary tree including methods to add,and retrieve elements as well as traversals.

## Attendance Requirements:

All students are expected to attend all class sessions and are responsible for knowing the material covered.  No quizzes or exams can be made up unless arrangements prior to the absence have been made.  Any student missing more than 25% of the class will fail the class.

## Statement on Plagiarism and Academic Dishonesty:

Wayland Baptist University observes a zero-tolerance policy regarding academic dishonesty. Per university policy as described in the academic catalog, all cases of academic dishonesty will be reported, and second offenses will result in suspension from the university.

## Disability Statement:

In compliance with the Americans with Disabilities Act of 1990 (ADA), it is the policy of Wayland Baptist University that no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university. The Coordinator of Counseling Services serves as the coordinator of students with a disability and should be contacted concerning accommodation requests at (806) 291-3765. Documentation of a disability must accompany any request for accommodations.

## Course Requirements and Grading Criteria:

**Homework and Labs:** The homework will be periodic assignments given such as discussion board participation, questions from the book, or similar. The labs are coding projects that will be given and submitted.

**Quizzes:** A quiz will be given weekly to assess a student’s comprehension of the material to that point. The quiz will be timed to ensure that students are not looking up the answers.

**Exams:** The course contains 2 exams. Both are timed but not proctored. Exams will contain a variety of questions which may include multiple choice and short answer. Expect to read and write code for the exams.

**Grade Weights:**

40% Homework and Labs

10% Quizzes

20% Midterm

30% Comprehensive Final

**A: 90 – 100 B:  80 – 89 C:  70 – 79 D:  60 – 69 F: Below 60**

Students shall have protection through orderly procedures against prejudices or capricious academic evaluation. A student who believes that he or she has not been held to realistic academic standards, just evaluation procedures, or appropriate grading, may appeal the final grade given in the course by using the student grade appeal process described in the Academic Catalog. Appeals may not be made for advanced placement examinations or course bypass examinations. Appeals are limited to the final course grade, which may be upheld, raised, or lowered at any stage of the appeal process. Any recommendation to lower a course grade must be submitted through the Executive Vice President/Provost to the Faculty Assembly Grade Appeals Committee for review and approval. The Faculty Assembly Grade Appeals Committee may instruct that the course grade be upheld, raised, or lowered to a more proper evaluation.

## Tentative Schedule:

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| **Week #** | **Dates** | **Material Covered** |
| 1 | 10/10 – 10/16 | Chapters 1 & 2 |
| 2 | 10/17 – 10/22 | Chapters 3 & 4 |
| 3 | 10/24 - 10/30 | Chapters 5 & 6 |
| 4 | 10/31 - 11/6 | Chapter 7 & Midterm |
| 5 | 11/7 – 11/13 | Chapters 8 & 9 |
| 6 | 11/14 – 11/20 | Chapters 10 & 11 |
| BREAK | 11/21 – 11/27 | THANKSGIVING |
| 7 | 11/28 - 12/4 | Chapter 11 & 15 |
| 8 | 12/5 – 12/10 | Final Exam |

## Academic Honesty:

Disciplinary action for academic misconduct is the responsibility of the faculty member assigned to this course. The faculty member is charged with assessing the gravity of any case of academic dishonesty, and with giving sanctions to any student involved.

Important Dates:

Oct 10 First day of Class

Oct 17 Last day to drop without record

Nov 11 Last day to withdraw with “W”

Dec 2 Last day to withdraw with a “WP/WF”

Dec 10 Last Class

This syllabus is only a plan.  The teacher may modify the plan during the course.  The requirements and grading criteria may be changed during the course if necessary.