Midland College
COSC 2336
Programming Fundamentals III
SCH (3-1)

Course Description:

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), searching, sorting, recursion, and algorithmic analysis. Programs will be implemented in an appropriate object oriented language.

(COSC 2336 is included in the Field of Study Curriculum for Computer Science.)

Prerequisite: COSC 1337

Text, References, and Supplies:

CENGAGE UNLIMITED-ACCESS (12 Months), Author: CENGAGE, ISBN-9780357700037 (This access code includes MindTap access and the e-text for the course: Azevedo/Cutajar's Java Data Structures, 1st Edition, Joao Azevedo & James Cutajar, Cengage Learning, ISBN-13: 978-0-357-11484-1) You are not required to purchase a printed textbook. However, students can obtain this book thou their Cengage Unlimited account for an additional fee.

Hardware:

- You will need a computer capable of running Eclipse to complete your work.
- For testing you will need to have access to a web camera as well as reliable internet access.
- Chromebooks DO NOT support the Eclipse.

Software:

- *Eclipse* IDE for Java Developers. *Eclipse* is installed on all Computer Science classroom computers and in lab 149. You may get a copy of *Eclipse* by going to *Eclipse.org* (IDE for Java Developers)
- LockDown Browser and Respondus Monitor® one-year license - needed to take exams.

Materials: USB Flash drive for saving your work

Student Learning Outcomes (SLO) and Core Competencies:

SLO1. Design and develop programs that implement basic data structures, including stacks, queues, linked lists, hash tables, trees, and graphs.
SLO2. Apply recursive techniques and algorithms to solve problems.
SLO3. Implement searching and sorting algorithms.
SLO4. Understand algorithm efficiency, Big-O notation, and why it should be considered in programming.
SLO5. Analyze and select appropriate data structures to implement a solution to a problem.
SLO6. Design and implement data structures using classes and incorporating object-oriented concepts.
SLO7. Demonstrate best practices of software development including testing, validation, and documentation.

Student Contribution/ Class Policies:

Students are encouraged to contact the instructor at any time. If you need to meet with the instructor, you will need to make an appoint to guarantee the instructor's availability at a specific time.

Students will be expected to exhibit professional behavior in class. With regard to cell phone use, keep it on silent and do not take calls unless it is an emergency. Texting, social networking, gaming or any other type of cell phone activity is not permitted during class time. Students may not use their cell phones at all while completing exams.

Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. ***Students who do not actively participate in an academically-related activity will be reported as never attended and dropped from the course.***

Students are expected to participate in class regularly. It is the student's responsibility to log into Canvas. All due dates can be found on the course schedule posted in Canvas. Students are expected to behave in a manner that will not interfere with the learning process.

Should you find that you are unable to complete the course, it is necessary for you to contact the Office of Student Services at Midland College and officially drop the class; otherwise a grade of "F" will be given for the semester grade. The policy for student withdrawals is stated in the college Catalog in the Student Rights & Responsibilities section. The last day for withdrawal is published in the Midland College catalog and the current course schedule.

Midland College does not tolerate ***scholastic dishonesty or academic misconduct*** in any form. Please read the Midland College student handbook.

COVID-19 prevention

Students attending face-to-face classes during the fall semester are required to wear face masks and maintain physical distancing at all times while in classrooms and buildings.

Students are encouraged to self-screen for COVID-19 symptoms each day before coming on campus. Students experiencing COVID-19 symptoms should stay home. Students are required to clean their own workspaces before and after each class using products provided by the college.

Grading/ Evaluation of Students:

Upon completion, your performance objective scores will be translated to percentages and the percentages to grades. Assignments will be evaluated and a score assigned. The score will be expressed as a percentage of possible points earned. Percentages are converted to grades and will be assigned as follows:

<60% = F
60% - 69% = D
70% - 79% = C
80% - 89% = B
90% - 100% = A

Quizzes	10%
Lab Assignments	50%
Project	20%
Exams	20%

Proctored Exams:

All exams must be proctored. A proctored exam is an exam that is supervised by an approved, neutral person (a proctor) who ensures the identity of the test taker and the integrity of the test taking environment. Proctoring for this course is done using Respondus LockDown Browser + webcam.

Quizzes/Assignments/Exams

All quizzes/assignments/exams have a due date. No late submissions will be accepted.

Feedback will be given through Canvas within a week of the due date of the assignment.

Course Schedule:

For a tentative schedule of the class material and specific due dates of assignments to be covered, please refer to the schedule provided in Canvas.

Canvas:

It is important for you to log into Canvas every day.

ADA Statement:

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

AMERICANS WITH DISABILITIES ACT

The Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act require that no otherwise qualified person with a disability be denied access to, or the benefits of, or be subjected to discrimination of any program or activity provided by an institution or entity receiving federal financial assistance. It is this Section 504 mandate that has promoted the development of disability support service programs in colleges and universities across the country. Sub-part E of Section 504 deals specifically with this mandate for institutions of higher education.

While it does not require development of special educational programming, for students with disabilities, it does require that an institution (public or private) be prepared to make appropriate academic adjustments and reasonable accommodations to allow the full participation of students with disabilities in the same programs and activities available to non-disabled students. Disabilities may include things such as physical/mobility problems such as paralysis or academic problems like learning disabilities. Some examples of accommodations are extra time for tests, testing in a quiet location, and providing architectural access to buildings.

Non-Discrimination Statement:

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

Tana Baker Title IX Coordinator/Compliance Officer 3600 N. Garfield, SSC 131 Midland, Texas 79705
(432) 685-4781 tbaker@midland.edu

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481

Applied Technology Division Information:

Division Dean:	Curt Pervier	143 TC	(432) 685-4677
Program Chair:	Heather Sanders	109 TC	(432) 686-4821
Division Secretary:	Lisa Hays	143 TC	(432) 685-4676

Communication is important! If you have a problem that is interfering with your successful completion of this course, please contact the instructor. Students are encouraged to contact the instructor at any time; however, making an appointment will guarantee the instructor's availability at a specific time.

Allow 48 hours for the instructor to return all calls and emails.