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. (This course is included in the Field of Study Curriculum for Computer Science.)

Prerequisite: COSC 1337/1437 – Programming Fundamentals II

Text, References, and Supplies:


Software: We will be using Visual Studio 2017 community for the course.

Visual Studio is installed on all Computer Science classroom computers.

Should you choose to purchase your textbooks somewhere other than the college bookstore you should always check with the instructor first to make sure that there has not been a change in books and that you are purchasing the complete package used for the course.

- 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.

Lab Assignments/Homework: It is important that the student complete all homework assignments. Late assignments will not be accepted. There will be no exceptions to this policy.

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

50% - Homework assignments
25% - Chapter Exams
25% - Final Exam/Project

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. Approved proctored location on campus is the computer Science lab in 104TC. For online testing ProctorU (there is a fee to the student) may be used.

Assignments/Exams:

All 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 place documentation on file with the Counselor/Disability Specialist. Students with disabilities should notify Midland College prior to the beginning of each semester. Student Services will provide each student with a letter outlining any reasonable accommodations. The student must present the letter to the instructor at the beginning of the semester. More information can be found at disability services or by contacting the Midland College Disability Specialist, Shep Grinnan at 685-4505.

Applied Technology Division Information:

Division Dean: Curt Pervier 143 TC (432) 685-4677
Department 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.
Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individuals have been designated to handle inquiries regarding the non-discrimination policies: Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu. For further information on notice of non-discrimination, visit http://wdcrobpcolp01.ed.gov/CFAPPS/OCR/contactus.cfm or call 1 (800) 421-3481.

Spanish

Midland College no discrimina por motivos de raza, color, nacionalidad, sexo, discapacidad, o edad en sus programas o actividades. Las siguientes personas han sido designadas para responder a cualquier pregunta o duda sobre estas políticas no discriminatorias: Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu. Para más información sobre estas políticas no discriminatorias, visite http://wdcrobpcolp01.ed.gov/CFAPPS/OCR/contactus.cfm o llame al 1 (800) 421-3481.