COSC 2436 Programming Fundamentals III (4 credit hours)

Prerequisite Required: COSC 1437.

Course Description: Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. This course may use instructional examples and assignments from various programming languages, including but not limited to C, Objective-C, C++, C#, and/or Java. COSC 2436 will satisfy the Associate in Sciences degree general elective requirement. This course will fulfill degree requirements established by the colleges of DCCCD only if this course has been successfully completed and the date of completion does not exceed 10 years. (3 Lec., 3 Lab.)

Coordinating Board Academic Approval Number 1102015707

Course Objectives:

- Understand the principles of objects and classes
- Declare, instantiate and assign class objects
- Follow guidelines and techniques of software engineering in program design and development
- Create and use void and non-void class methods with parameter passing and local variables
- Use primitive and reference data types
- Understand information hiding and encapsulation
- Review selection and repetition structures
- Understand and use inheritance and polymorphism
- Understand and use container classes and arrays
- Use basic searching and sorting techniques
- Manage input and output files

Learning Outcomes:

- Discuss computer and communications terminology
- Evaluate the effects and implications of computers and communication technology on society
- Demonstrate knowledge of the impact of technology on the individual’s privacy, security, lifestyle, work environment, standard of living, and health
Gather information for decision-making
- Participate in global communities using available technology
- Create quantitative and qualitative data presentations

**Attendance Policy**

In order to be successful students must attend and participate in enrolled courses.

Students need to be in class on time. Any absence needs to be contact the instructor by email before coming back to class. This section will not require students to engage in class activities during the winter holiday period.

**Course Materials**

MindTap for Azevedo/Cutajar's Java Data Structures

ISBN: 9780357114841

**CLASSROOM POLICIES:**

Assignments – After each chapter, there is an assignment. The homework should be done on the eCampus by the due date is shown in the course outline. 20% will be deducted for all late work.

Lab Assignments – The labs will be posted on eCampus. The students have to do the lab by himself/herself in class and submit on eCampus or attach it and send e-mail by the due date with the subject with the required subject (ask your instructor if you do not know). Students have to do the lab assignment in the lab. If students did not show up and do the lab during the lab time, the labs cannot be accepted.

Projects individual projects will be assigned

Team Work: the class will be divided into teams. Each team will choose a topic to research information and have the presentation in front the class on the last class. Each student should participate in one team and should do his/her part to get the team work credit.

Late work: The late homework or lab cannot be accepted. If there is any special reason, students should contact the instructor before the due date. 20% will be deducted for all late work.

Test must be taken on the date given. Anyone missing a test with an excused absence may be given an alternate test. This test will be provided at the discretion of the instructor.

- For an absence from a test to be excused: there must be documentation provided to the instructor prior to the test date showing a reason(s) for not being able to attend the exam (examples: medical appointment that could not be scheduled at another time, attending a funeral) and the reason must be agreed to by the instructor, OR there must be documentation provided to the instructor within two class days after the test (AND before the next test) that demonstrates an emergency that precluded the student from taking the test (examples: emergency medical treatment of student or student’s child,
auto accident). Anyone missing a test with an unexcused absence will receive a grade of zero on the test.

Anyone sharing/copying answers in the home works, labs and during a test will receive zero at the first time. At the second time will be failed for this class.

**In Class Policies**

- You must silence the phone/beeper during class sessions. No electronic devices, such as, labtop and iphone are allowed during the class only for supporting the class.

- Talking to somebody during class time about something that does not relate to current class must be done outside of the class room.

- Do not eat or drink in the computer lab. Cleaning up your trash is required.

- Using abusive language is not permitted in this classroom.

- You are responsible for your own actions and decisions. Blaming others for my own bad choices and decisions is not permitted.

- Anyone sharing/copying answers in the home work, labs and during a test, BOTH OWNER AND COPIER will receive zero at the first time. At the second time will be failed for this class.

**Academic Process**

Students are encouraged to discuss academic goals and degree completion with their instructors. Specific advising is available throughout the semester.

Disclaimer Reserving Right to Change Syllabus “The instructor reserves the right to amend this syllabus as necessary.”

**POLICIES**

Students should click on the links below and read all of these policies.

[Institutional Policies](#)