South Plains College
Common Course Syllabus: COSC 1436
Revised August 2020

Department: Mathematics, Engineering, and Computer Science

Discipline: Computer Science

Course Number: COSC 1436

Course Title: Programming Fundamentals I

Available Formats: conventional/flex

Campuses: Levelland

Course Description: This course introduces the fundamental concepts of structured programming, and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. (This course is included in the Field of Study Curriculum for Computer Science.)

Prerequisite: Successful completion with a grade of 'C' or better in COSC 1301

Credit: 4 **Lecture:** 3 **Lab:** 3

Textbook: Starting Out with C++: From Control Structures through Objects, 9th Edition, Tony Gaddis. 2018. ISBN 978-0-13-449837-9. You must have a paper or digital copy of this book. We will use the same book for COSC1437. You do NOT need to buy the online access card with this book.

Supplies: You must have access to a laptop or desktop where you can write programs. Microsoft Visual C++ Community is installed on our lab computers. You may install this software on a home computer for no charge. Be sure to register (for free) so it does not expire in 30 days. Install download from: https://visualstudio.microsoft.com/downloads/

You must be able to store your projects so that they are accessible from anywhere. It is recommended that you purchase a USB flash drive to bring to class. You will be able to use this drive for future computer science classes as well. It is recommended that you back up your files on this drive to a home computer or other media.

We will use Turingscraft CodeLab online software for lab assignments. Access to this web site must be purchased for $25: http://www.tcgo2.com

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:
- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Describe how data are represented, manipulated, and stored in a computer.
2. Categorize different programming languages and their uses.
3. Understand and use the fundamental concepts of data types, structured programming, algorithmic design, and user interface design.
4. Demonstrate a fundamental understanding of software development methodologies, including modular design, pseudo code, flowcharting, structure charts, data types, control structures, functions, and arrays.
5. Develop projects that utilize logical algorithms from specifications and requirements statements.
6. Demonstrate appropriate design, coding, testing, and documenting of computer programs that implement project specifications and requirements.
7. Apply computer programming concepts to new problems or situations.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and effort are the most important activities for success in this course. The instructor maintains records of the student's engagement throughout the semester. Five (5) absences, **for any reason**, are allotted to the student for the semester. If this number is exceeded, the instructor has the right to drop you with a grade of F or an X, depending on their discretion.

Plagiarism violations include, but are not limited to, the following:
1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:
1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;

4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

COVID Syllabus Statement: Should be provided by the Vice-President of Student Services over email.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning**.** Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

Campus Concealed Carry: Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun.

Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: http://www.southplainscollege.edu/campuscarry.php

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester.   The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com.* Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases.   Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

COVID Syllabus Statement: It is the policy of South Plains College for the Spring 2021 semester that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings while in SPC buildings including in classrooms, labs, hallways, and restrooms. Failure to comply with this policy may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Dean of Students on the Levelland campus or the Dean/Director of external centers for Student Code of Conduct Violation. Students who believe they have been exposed or may be COVID-19 positive, must contact Health Services, DeEtte Edens, BSN, RN at (806) 716-2376 or dedens@southplainscollege.edu.

Time: Section 001: M/W 1:00 PM - 3:30 PM (Mondays Face to Face, Wednesdays Online)
                     Section 002: T/Th 9:30 AM - 12:00 PM (Tuesdays Face to Face, Thursdays Online)
Course Title: Programming Fundamentals 1
Instructor: Dr. Pathirage, Don
Room: Levelland Math Building 125B
Phone: 806-716-2666 (voice mail capable)
Email: dpathirage@southplainscollege.edu

Office Hours:

Mon (F2F)	Tues (F2F)	Weds (Online)	Thurs (Online)	Friday (Online)
12:15PM-1:00PM 3:00PM-4:00PM	12:00PM-1:00PM 2:15PM -3:30PM	12:15PM-1:00PM 3:00PM-4:00PM	12:00PM-1:00PM 2:15PM-3:30PM	12:00PM-1:30PM Or by appointment

Academic Conduct: You may discuss the lab and programming assignments with your classmates, but you must code, debug, and execute the projects on your own. Copying of another student's work or allowing your work to be copied is considered plagiarism and a failing grade for that assignment will be given to all parties involved. Cell phones MUST be turned off and put away during class and testing periods. Calculators will NOT be allowed during exams.

Assignment Policy: Current assignments and due dates will be announced in the class. **Students are expected to read the current chapter before coming to class.** During the scheduled lab, there will be lab exercises to complete during the lab. (CodeLab assignments can be finished on your own time). All assignments will be given a Due Date.

All assignments will be given a _Due Date_. Assignments turned in late will have 10 points deducted for each day and will be accepted **_no later_** than three days past the due date. **Lab attendance is required, and students are expected to stay for the full lab time. Your work schedule or any other schedules must not overlap with the class schedule.**

Grading Policy: There will be 3 major exams and a comprehensive final. All exams **must** be taken in person. No student will be exempt from the final. Your lab grade will be calculated from CodeLab grades, in-class lab assignments, and programming assignments. Your final grade will be computed as follows:
                            Major Exams (3): 50%
                            Final Exam: 20%
                            Lab Grade: 30%

All tests will count towards the final grade, i.e. no exam grades will be "dropped". Only students that miss an exam due to a collage-approved absence are eligible to take the makeup exam. If you miss an exam, it is your responsibility to contact me as soon as possible using email. If permission is granted for a makeup exam, I will want it to be taken before the next class meeting. Missing an exam is a serious matter and it is up to the student to take the proper action, otherwise, a zero will be assigned as the exam grade.

Additional Course Objectives:

- To develop the ability to correctly analyze a variety of problems and generate appropriate algorithmic solutions.
- To instill the principles of top-down, structured design when using the procedural programming paradigm.
- To understand the basics of computer hardware and the steps of software development.
- To understand how computers represent and store data.
- To produce programs which use conditional execution structures, iteration structures, and functions.
- To produce programs which use appropriate data types: simple variables, structures, arrays, strings, and multidimensional arrays.
- To explore the syntax and usage of the C++ programming language as a means of accomplishing the above objectives.

COSC1436 Fall 2020 Course Outline

This proposed schedule may change as the semester progresses! Always refer to blackboard for exact dates.

Week Start date	Topics
1 Jan 18	*Martin Luther King Holiday – Mon January 18, 2020* Chapter 1 Intro to Computers and Programming
2 Jan 25	Chapter 2 Intro to C++ Chapter 2 Data Types and Arithmetic Operators
3 Jan 27	Chapter 3 Input, Mathematical Expressions, Type Casting, and Assignment Chapter 3 Formatting Output
4 Feb 01	Chapter 3 Library Function Calls **Exam 1** *(in person - Room M125)*
5 Feb 08	Chapter 4 Conditions, Logical Expressions Chapter 4 If statements
6 Feb 15	Chapter 4 Nested If statements Chapter 4 Switch statements
7 Feb 22	Chapter 5 Looping Chapter 5 Nested Logic and Looping
8 Mar 01	Chapter 5 finish iteration and file input and output **Exam 2** *(in person - Room M125)*
9 Mar 08	Chapter 6 Functions and Parameters
10 Mar 15	Spring Break
11 Mar 22	Chapter 6 Scope and Lifetime, Value-returning functions, Random number generator
12 Mar 29	Chapter 7 Arrays: One-dimensional arrays Chapter 7 Passing arrays as parameters
13 Apr 5	**Exam 3** *(in person - Room M125)* Chapter 8 Sorting algorithms for arrays *Thurs 11/15 Last Drop Day*
14 Apr 12	*Mon April 13, 2020 Easter Holiday* Chapter 8 Searching algorithms for arrays
15 Apr 19	Two-Dimensional arrays, three or more dimensions
16 Apr 26	Chapter 11 Abstract Data Types
17 May 03	Arrays of Structures and variations
18 May 10	***Final Exams:*** Section 001: May 12, 10:15 a.m.-12:15 p.m. Section 002: May 13, 8:00 a.m.-10:00 a.m.

Classroom Seating Arrangement:

 Students are not allowed to sit in the X marked area to maintain a 6 feet distance.

All keyboards will be wrapped in plastic. Students' seating areas will be swapped with X marked areas after each class.

Large Table Area