TU TIFFIN UNIVERSITY / **ONLINE**

CST201 Introduction to Programming
(3 credit hours)
Course Syllabus

Course Description

This course introduces the basic concepts of a structured programming language. All programming languages use the same concepts and the language will be based on the current need of the industry. The student will learn to design and develop software applications using the building blocks of a language which can include basic variable declaration and sequential code using mathematical expressions to more advance techniques with decision and repetition coding using advance data variable structures such as arrays and records (these may have different names in some languages but, have the same ideas). File manipulation for input/out will be addressed. The course will begin to look at breaking a large program down into functions that forms the basis for object-oriented programming.

Course Learning Outcomes

By the end of this course, you will be able to:

1. Design in an effective Integrated Development Environment (IDE) system
2. Apply the foundational concepts of any programming language
3. Explain file input/output manipulation techniques
4. Identify object-oriented programming languages

Required Textbook(s) and Resources

Gaddis, T. (2023). *Starting Out With Python* (6th ed.). Pearson

A digital version of your book is included automatically in your course. You can access it through the Pearson Revel tool in Moodle.

You will need to download the current Python IDLE from www.python.org

Note: This course may contain additional resources for specific activities or modules. Be sure to read the instructions carefully for individual assignments or activities for those requirements. Where applicable, Tiffin University has obtained permission to use copyrighted material.

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Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the [Tiffin University Library](#).

Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each week**. For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week**.

To help you plan your time and keep you on track toward successful completion, this course maintains a distinctive rhythm for assignment due dates:

1. All times assume Eastern Time (GMT-4).

2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.

3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET** on **Wednesdays.**

4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET** on **Saturdays, and**

5. Major assignments and reflections are typically due by **11:55 p.m. ET** on **Sundays.**

Learning Activities

The course has activities ranging from forums, labs, papers, programs and a final exam. The main assignments for the course are 5 programs which encompass the weekly learning goals. These programs are coded in the Python IDLE and submitted in Moodle. The labs in the Pearson Revel enforce the weekly learning goals to prepare the students to code these main programs. A comprehensive final exam accesses the student on the course learning outcomes.

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Grading

The chart below identifies the individual contributions from each type of activity, per module. *The Reflection activities in Weeks 2 & 4 are extra credit, 10 points each.*

Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Discussion	25	25	25	25	25	25	n/a	150
Lab Assignment	25	25	25	25	25	25	25	175
Assignment	50	n/a	n/a	n/a	n/a	n/a	25	75
Program	15	75	90	90	90	90	n/a	450
Final Exam	n/a	n/a	n/a	n/a	n/a	n/a	150	150
Total	115	125	140	140	140	140	200	1000

Grading Scale

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

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CST201 Schedule and Weekly Checklist

Topic	Learning Activities (Due by 11:55 p.m. ET on day designated)
Start Here	☐ MON: Activity 1.1: Meet Your Classmates!
Week 1: • Hardware and Software • How Computers Store Data • How a Program Works • The Python IDE • Designing a Program	☐ WED: Activity 1.2 – Initial Post ☐ SAT: Activity 1.2 – Secondary Posts ☐ SAT: Activity 1.3: Flow Charts ☐ SUN: Activity 1.4: Week 1 Lab Assignments ☐ SUN: Activity 1.5 Python
Week 2: • Input, Processing, and Output • Displaying Output with the print Function • Comments • Variables • Reading Input from the Keyboard • Performing Calculations • More About Data Output • Named Constants • Introduction to Turtle Graphics	☐ WED: Activity 2.1 – Initial Post ☐ SAT: Activity 2.1 – Secondary Posts ☐ SUN: Activity 2.2: Week 2 Lab Assignments ☐ SUN: Activity 2.3 Sequential Coding ☐ SUN: Activity 2.4 Reflection (Extra Credit)
Week 3: • The if Statement • The if-else Statement • Comparing Strings • Nested Decision Structures and the if-elif-else Statement • Logical Operators • Boolean Variables • Turtle Graphics: Determining the State of the Turtle	☐ WED: Activity 3.1 – Initial Post ☐ SAT: Activity 3.1 – Secondary Posts ☐ SUN: Activity 3.2: Week 3 Lab Assignments ☐ SUN: Activity 3.3: Using Decision Structures

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Topic	Learning Activities (Due by 11:55 p.m. ET on day designated)
Week 4: • Introduction to Repetition Structures • The while Loop: A Condition-Controlled Loop • The for Loop: A Count-Controlled Loop • Calculating a Running Total • Sentinels • Input Validation Loops • Nested Loops	☐ WED: Activity 4.1 – Initial Post ☐ SAT: Activity 4.1 – Secondary Posts ☐ SUN: Activity 4.2: Week 4 Lab Assignments ☐ SUN: Activity 4.3: Using Repetition Structures ☐ SUN: Activity 4.4: Reflection (Extra Credit)
Week 5: • Introduction to Functions • Defining and Calling a Void Function • Designing a Program to Use Functions • Local Variables • Passing Arguments to Functions • Global Variables and Global Constants • Introduction to Value-Returning Functions: Generating Random Numbers • Writing Your Own Value-Returning Functions • The math Module • Storing Functions in Modules	☐ WED: Activity 5.1 – Initial Post ☐ SAT: Activity 5.1 – Secondary Posts ☐ SUN: Activity 5.2: Week 5 Lab Assignments ☐ SUN: Activity 5.3: Using Functions
Week 6: • Introduction to File Input and Output • Using Loops to Process Files • Processing Records • Exceptions	☐ WED: Activity 6.1 – Initial Post ☐ SAT: Activity 6.1 – Secondary Posts ☐ SUN: Activity 6.2: Week 6 Lab Assignments ☐ SUN: Activity 6.3: Using Files for Input/Output

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Topic	Learning Activities (Due by 11:55 p.m. ET on day designated)
Week 7: • Sequences • Introduction to Lists • List Slicing • Finding Items in Lists with the in Operator • Comprehensive Review	☐ SUN: Activity 7.1: Different Data Structures ☐ SUN: Activity 7.2: Week 7 Lab Assignments ☐ SUN: Activity 7.3: Comprehensive Final Exam

Tips for Success

Successful online learning requires a good deal of self-discipline and self-direction. As seekers of the truth, we should be willing to challenge and review one another's academic work in a spirit of respectful comradery and constructiveness. You should accept constructive feedback as a gift. Your course is a place for you to stretch and grow as you benefit from the expertise, knowledge, experience and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge, understanding and application.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements in any given week are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

For More Information:

Be sure to review the Support, Policies, and Procedures addendum.