



**Dekalb Christian Home Educators
College Academy
Programming Foundations I**

Fall 2023 Course Syllabus

Course Information

Instructor Information

- **Instructors:** Jenelle Davis, MS, CSSLP
- **Office:** Stone Mountain First United Methodist Church
- **Office Hours:** By Appointment
- **Meeting Time:** Thursdays at 2:00-2:55PM via Zoom
- **Office Telephone:** 404-593-0357
- **E-mail:** jedavis@ga.ccu.edu

Course Description

- Topics focus on the introduction to the design of computer applications emphasizing modern software programming principles: object-oriented design, decomposition, encapsulation, abstraction, prototyping, and testing. Students will be required to demonstrate competency in the design of object-oriented solutions and the implementation of event driven logic to solve real-world business problems. This course is intended to formally introduce the student to the science (and art) of programming. A rigorous introduction to all of the foundational concepts of programming will be provided. Students will be challenged and stretched through code-based assignments and timely assessment.

Prerequisite

- Intermediate Digital Literacy
- Comfortable with Computer Troubleshooting Independently

General Education Area

- **Home School:** This course provides 45 hours of instruction and 100 hours of student preparation. This provides 145 hours of instructional activities satisfying 1 year of homeschool technology instruction as defined by [the Georgia Department of Education Home Study Program](#).
- **High School Credit:** This course satisfies [1 Unit of Computer Science as an Elective](#) credit for high school graduation requirements for:
 - [11.08300 Introduction to Python](#)
- **College Credit:** For students seeking Dual Credit, this course satisfies 3 credit hours of college credit awarded by Colorado Christian University:
 - [CIS 130 Programming Foundations I](#) (3 Credit Hours)

Students seeking Dual Credit must also complete the [CCU Academy Registration Form](#) and pay the associated \$200 fees for CIS-130 on or before November 1, 2023.

Textbook & Course Materials

- **Text and Courseware:**
 - **Required Textbook:** Downey, A. (2015). [Think Python, 2nd Edition](#). Sebastopol, CA: O'Reilly.
 - **Required Courseware:** [Cisco Networking Academy - Python Essentials 1](#)
 - **Software:** [Python 3.11.3](#)
 - **Computer:** [System Requirements](#)
 - **Online Classroom:**
 - Registration URL: <https://k12.instructure.com/enroll/4B9FTK>
 - Course URL: <https://k12.instructure.com/courses/1037085/> (Bookmark)

Course Requirements

- Internet connection (DSL, LAN, or cable connection desirable)

Course Structure

This is in-person with online and at-home activities.

Important Note: It is the student's responsibility to check our registration site (dcheeducators.org) for corrections to the syllabus. Any changes will be clearly noted in course announcements.

Technical Assistance

To access course materials on the Online Canvas Classroom, you will need access to the Internet and a supported Web browser (Chrome, Firefox, and Safari are recommended). You

will need to register for the class first (link provided in **Textbook & Course Materials** section). Afterwhich, you can access the course directly.

Statement of Faith

This course is taught from a Biblical Worldview and reflects the Dekalb Christian Home Educators (“DCHE”) Statement of Faith defined in the [DCHE Bylaws](#).

Student Learning Outcomes

- The student will demonstrate the use of appropriate data types and operators for a variety of scenarios
- The student will control the flow of an application through decision structures and loops
- The student will create functions to minimize code redundancy
- The student will design and create an application using Object-Oriented design
- The student will articulate how the study of software development has informed their understanding of how God designs and creates

Topic Outline/Schedule

Please see the Topic Outline/Schedule in the table below and note the following:

- **Readings:** Each Week has assigned Readings below.
- **Assessments:**
 - **Class Participation:** Class Participation includes in-class discussion with Biblical Integration of Course Topics each week.
 - **Programming Assignments:** Programming Assignments are submitted online. These assignments are designed for students to demonstrate applied knowledge of programming concepts.
 - **Quizzes:** Quizzes are timed multiple choice assessments submitted online. Quizzes are designed for students to demonstrate theoretical knowledge of programming concepts.
 - **Midterm Exam:** The Midterm Exam reviews topics from weeks 1-5 and consists of fill in the blank and/or short answer questions. The Midterm Exam is designed for students to demonstrate cumulative theoretical knowledge of programming concepts. The midterm exam is timed and will be completed in-class in the Learning Management System.
 - **Final Exam:** The Final Exam reviews topics from weeks 6-10 and consists of fill in the blank and/or short answer questions. The Final Exam is designed for students to demonstrate cumulative theoretical knowledge of programming concepts.
 - **Final Project:** The Final Project is a cumulative Programming Assignment which is designed for students to demonstrate comprehensive applied knowledge of the course programming concepts.

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
1	Beginning Python	Class Discussion: In 2 Chronicles 26:15, it states: "In Jerusalem he made machines, invented by skillful men, to be on the towers and the corners, to shoot arrows and great stones. And his fame spread far, for he was marvelously helped, till he was strong."	Chapter 1 - The Way of the Program (Downey)	Module 1 - Introduction to Python and Computer Programming - Sections 1.0 and 1.1 (Cisco)	Week 1 - Programming Assignment: IDE Installation

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
		<p>Technology is a means by which God has provided for His creation to operate with. Modern technology includes computing machinery and resident computer programs. Such computer programs direct the machinery on its computing operations. How can Bible-believing Christians utilize computer programming for the Glory of God? You are encouraged to reference appropriate scripture verses to support your reasoning.</p>			
2	Beginning Python	<p>Class Discussion: In 1 Peter 4:10 it states: “As each has received a gift, use it to serve one another, as good stewards of God's varied grace...” Python is a Computer Programming Language which supports multiple programming paradigms including structured, functional, and object-oriented. How can Python be utilized to steward computing resources well? You are encouraged to reference appropriate scripture verses to support your reasoning.</p>	Chapter 1 - The Way of the Program (Downey)	Module 1 - Introduction to Python and Computer Programming - Sections 1.2, 1.3, and 1.4 (Cisco)	Week 2: Quiz

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
3	Variables	<p>Class Discussion: In Genesis 2:19-20 it states: “And out of the ground the Lord God formed every animal of the field and every bird of the sky, and brought them to the man to see what he would call them; and whatever the man called a living creature, that was its name. 20 The man gave names to all the livestock, and to the birds of the sky, and to every animal of the field...” In the beginning, God gave Adam dominion over the earth. In doing so, He ordained Adam with the charge of stewarding earth’s resources well. In order to do this, Adam had to name each item within creation. How are variables similar to traditional names? How are they different?</p>	Chapter 2 - Variables, Expressions, and Statements (Downey)	Module 2 - Python Data Types, Variables, Operators, and Basic I/O Operations - Sections 3-5 (Cisco)	Week 3 - Programming Assignment: Hello World!
4	Variables	<p>Class Discussion: In 2 Timothy 2:15 it states “ Do your best to present yourself to God as one approved, a worker who has no need to be ashamed, rightly handling the word of truth.” In computer programming, a string is a data type which consists of a</p>	Chapter 8 - Strings (Downey)	Module 2 - Python Data Types, Variables, Operators, and Basic I/O Operations - Section 6 (Cisco)	<p>Week 4 - Programming Assignment #1: Bear</p> <p>Week 4 - Programming Assignment #2 - Name</p>

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
		<p>collection of characters. In Python, a String is stored as a character array. In the Bible, one word (or words) out of context would result in exegesis a false hermeneutic. However, a complete verse within its correct context would more appropriately support exegesis, a correct hermeneutic. How do strings compare/contrast with this concept?</p>			
5	MIDTERM EXAM				
6	Control Flow	<p>In 1 Thessalonians 5:21-22 it states: “But examine everything carefully; hold fast to that which is good; abstain from every form of evil.” Bible-believers are called to examine all things. This concept is also referred to as discernment. Wisdom is the implementation of sound discernment. How can programs be utilized to exercise discernment?</p>	Chapter 5 - Conditions and Recursion (Downey)	Module 3: Boolean Values, Conditional Execution, Loops, Lists and List Processing, Logical and Bitwise Operations - Sections 3.1-3.3	Week 6 - Programming Assignment:
7	Control Flow	<p>Class Discussion: In 2 Corinthians 13:5 it states: “Examine yourselves, to see whether you are in the faith. Test yourselves.</p>	Chapter 7 - Iteration (Downey)	Module 3: Boolean Values, Conditional Execution, Loops, Lists and List Processing, Logical and Bitwise	Week 7 - Quiz

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
		<p>Or do you not realize this about yourselves, that Jesus Christ is in you?—unless indeed you fail to meet the test!” Bible-believers are called to examine ourselves continually. In doing so, we operate in a repentant posture striving for Christlikeness in integrity. How can programs be implemented to reinforce data integrity?</p>		Operations - Sections 3.4-3.7	
8	Functions	<p>Class Discussion: Isaiah 43:21 states “The people whom I formed for myself that they might declare my praise.” When God created male and female, He designed each with a specific purpose: to worship Him for His Glory. Everything God created He did so ultimately for His Will and His Glory. When programming functions, how can we do so to the Glory of God?</p>	Chapter 3 - Functions (Downey)	Module 4: Functions, Tuples, Dictionaries, Exceptions, and Data Processing - Sections 4.1-4.4	Week 8 - Programming Assignment:
9	Functions	How can Python be utilized to advance the communication of the Gospel?	Chapter 6 - Fruitful Functions (Downey)	Module 4: Functions, Tuples, Dictionaries, Exceptions, and Data Processing - Sections 4.5-4.7	Week 9 - Quiz
10	FINAL EXAM				

W E E K	TOPIC	CLASS PARTICIPATION	READINGS & VIEWINGS	LAB	ASSESSMENT
	FINAL PROJECT				

Grading Policy

Graded Course Activities

Points	Description
100	Class Participation 10 Class Discussions - 10 Points Each
500	Programming Assignment 5 Programming Assignments - 100 Points Each 1 Bonus Programming Assignment - 100 Bonus Points Available
150	Quizzes 3 Quizzes - 50 Points Each
100	Midterm Exam 40 Bonus Points Possible
100	Final Exam 30 Bonus Points Possible
50	Final Project
1000	Total Points Possible

Rubrics

Programming Assignment Rubric

CRITERIA	RATINGS		
	FULL MARKS 25 PTS	PARTIAL MARKS 15 PTS	NO MARKS 0 PTS
FORMAT	Program implements python programming language, python filetype, and implements in IDLE or Cisco Python Engine..	Program implements Python programming language, however the filetype and/or IDLE or Cisco Python Engine is incorrect.	Program does not implement Python programming language, Python filetype, nor the IDLE or Cisco Python Engine correctly.
FUNCTIONALITY	Program implements all requirements specified in the instructions.	Program meets partial requirements specified in the instructions.	Program does not meet any requirements specified in the instructions.
DOCUMENTATION	Program includes comments throughout describing program components.	Program includes minimal comments throughout which describe program components.	Program does not include any comments throughout.
CORRECTNESS	Program runs without any runtime nor compilation errors.	Program contains 1-5 compilation errors.	Program contains 6+ compilation errors.

Quizzes Rubric

The Lesson Quizzes are 10 Questions Multiple Choice.

Midterm Exam Rubric

The Midterm Exam is 20 Questions consisting of Fill in the Blank and/or Short Answer.

Final Project Rubric

CRITERIA	RATINGS		
	FULL MARKS 25 PTS	PARTIAL MARKS 15 PTS	NO MARKS 0 PTS
FORMAT	Program implements python programming language, python filetype, and implements in IDLE or Cisco Python Engine..	Program implements Python programming language, however the filetype and/or IDLE or Cisco Python Engine is incorrect.	Program does not implement Python programming language, Python filetype, nor the IDLE or Cisco Python Engine correctly.
FUNCTIONALITY	Program implements all requirements specified in the instructions.	Program meets partial requirements specified in the instructions.	Program does not meet any requirements specified in the instructions.
DOCUMENTATION	Program includes comments throughout describing program components.	Program includes minimal comments throughout which describe program components.	Program does not include any comments throughout.
CORRECTNESS	Program runs without any runtime nor compilation errors.	Program contains 1-5 compilation errors.	Program contains 6+ compilation errors.

Final Exam Rubric

The Final Exam is 20 Short Answer Questions with 3 Additional Bonus Short Answer Questions.

Late Work Policy

Be sure to pay close attention to deadlines—there will be no make-up assignments or quizzes, or late work accepted without a serious and compelling reason and instructor approval.

Viewing Grades in Online Classroom

Points you receive for graded activities will be posted to the Online Canvas Classroom Grade Book.

Letter Grade Assignment

Letter Grade	Percentage	Points	Performance
A	90-100%	360 to 400	Excellent Work
B	80-89%	320 to 359	Good Work
C	70-79%	280 to 319	Average Work
D	60-69%	240 to 279	Poor Work
F	0-59%	239 and below	Failing Work

Course Policies

Participation

Students are expected to comply with the [DCHE Policies and Procedures](#). Students are expected to participate in all online activities as listed on the course calendar.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution.

Complete Assignments

All Quizzes and Exams for this course will be submitted electronically through Canvas Classroom unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from Instructor Davis *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider disenrolling from a course. For Dual Credit students, refer to the [CCU Academy Dual Credit Important Dates Schedule](#) for dates and deadlines for registration.

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if there is an extenuating circumstance. All incomplete course assignments must be completed within 30 days of the course end date.

Inform Your Instructor of Any Accommodations Needed

If you have a disability and would like to request accommodations, please contact the instructor during the first week of the semester so that your accommodations may be provided in a timely manner.

Academic Honesty Policy & Procedures

Academic honesty is the student's life application of integrity, a Biblical core value.

Plagiarism

It is important for students to acknowledge sources that are used for completing classroom assignments. Plagiarism is a form of academic dishonesty.

Plagiarism may be any one of the following:

1. Verbatim copying without proper documentation of the source(s).
2. Paraphrasing without proper documentation of the source(s).
3. Unacknowledged appropriation of information or ideas from someone else.

If students have any questions about these forms of plagiarism or about an assignment they are preparing, they should ask Instructor Davis for clarification rather than risk unintentional plagiarism.

Cheating

It is important for students to act in an honest and trustworthy manner. Work performed on examinations or other forms of evaluation must represent an individual's own work, knowledge and experience of the subject matter. Students are expected to follow the classroom rules established by Instructor Davis.

Cheating may be any one of the following:

1. Unauthorized looking at or procuring information from any unauthorized sources or from another student's work during an examination or from any work that will be graded or given points.
2. Unauthorized acquiring, reading or learning of test questions prior to the testing date and time.
3. Changing any portion of a returned graded test or report and resubmitting it as an original work to be regraded.
4. Presenting the work of another as one's own for a grade or points.
5. Knowingly assisting another student in cheating.

This list is not all-inclusive and the list itself is not meant to limit the definition of cheating to just these items mentioned.

Consequences of Academic Dishonesty

The disciplinary action for cheating or plagiarism is up to the discretion of the instructor. The instructor may select one or more of the following options:

1. Issue an oral or written notification and warn the student that further acts of this sort will result in additional disciplinary action.
2. Issue an "NP" or a failing grade ("F") or "0" for the assignment in question.
3. Refer the student to the Vice President for Student Services for disciplinary action.