Waldo County Technical Center
Waldo, Maine

Computer Careers

Course Number:	CC2P	**Course Title:**	Computer Careers Programming
Credit Hours:	3	**Clock Hours:**	Mon-Fri 11:45-1:45
Instructor:	Jeremiah Johnson	**Room:**	Computer Careers
Office Hours:	N/A	**Voice Mail:**	207-342-1314
E-mail Address:	jjohnson@waldotech.org		

Text:

Hacking With Swift - Paul Hudson- (9th grade reading level)

Unity Educator Toolkit - Unity

Game Interface Design - 2nd edition - (9th grade reading level)

Visual C# 2012 - 5th edition - (10th grade reading level)

C# Programming - 5th edition - (10th grade reading level)

EngradePro Online Gradebook

CPA/CPP – C++ Certified Associate/Professional Programmer Online Curriculum

Microsoft Virtual Academy Online Curriculum

Suggested Supplies: Access to the Internet,

Pre/Corequisite: Computer Careers (1), A+/PCPro Certification or equivalent, Keyboarding, Ability to read, comprehend, & write at a high school level, Intermediate computer proficiency (including file management). Lexile Reading at 1000 or higher is recommended due to the technical nature of the Material and Textbooks (10th grade reading level). Highly motivated students who are able to work independently and focus on education/training.

Course Description:

The Computer Careers Programming provides an advanced Topic for Students wanting to enter the Computer Programming field. Computer Programmers are becoming a required asset to any business. We will spend the first half of the year studying and preparing for the C++ Certified Associate Programmer (CPA) and C++ Certified Professional Programmer (CPP) Industry Certifications. Students will have the option to also complete the C Programming Language Certified Associate (CLA)/ C Programming Language Certified Professional (CLP) Certifications. The second half of the year will be divided into Microsoft MTA Exam Track focusing on C# Certification (MCSD: Windows Store Apps Using C#).

Course Objectives

This course is designed to:

- · Introduce students to C Language programming and skills needed to work in an application driven programming workforce careers
- · Encourage students to explore Programming technology career options, education, and certifications
- · Develop skills for obtaining employment through portfolio, interview, and demonstration activities
- · Provide students with the necessary skills to sit for the CLA, CLP, CPA, CPP, MTA, MCSD (483, 484, 485) Industry Certifications

Course Activities

- Lectures and lab projects to be conducted during meeting times
- Quizzes covering the concepts and information derived from current sections of course material
- Homework assignments consisting of research or text book questions
- Lab design projects involving teams or individuals using client & server operating systems to perform common network design configurations
- Participation in a live work scenario to support the School IT needs.

Unit Topical Outline

1. CLA - C Programming Language Certified Associate
   - 0 Installing and using your programming environment
   - 1 Introduction to computer programming
   - 2 Data types, their operations and basics of flow control
   - 3. Flow control (continued), more data types and computer logic
   - 4 Aggregating data into arrays
   - 5 Arrays vs. structures: different aggregates for different purposes
   - 6 Functions
   - 7 Connecting to the real world: files and streams
   - 8 Preprocessor and declarations
2. CPA – C++ Certified Associate Programmer
   - 0 Work environment
   - 1 Introduction to computer programming
   - 2 Advanced flow control and data aggregates
   - 3 Extending the expressive power: pointers, functions and memory
   - 4 Accessing different kind of data
   - 5 Object programming essentials
   - 6 Inheritance
   - 7 Exceptions
   - 8 Operators and enumerated types
3. CPP – C++ Certified Professional Programmer
   - 1. STL sequential containers
   - 2. Associative STL containers
   - 3. Non-modifying operations
   - 4. Modifying STL algorithms (operations)
   - 5. Sorting STL algorithms
   - 6. Merging STL algorithms
   - 7. Utilities and functional tools
   - 8. Advanced input and output
   - 9. Templates
4. Exam 70-483 Programming in C#
   - Manage program flow (25%)
   - Create and use types (24%)
   - Debug applications and implement security (25%)
   - Implement data access (26%)
5. Exam 70-484 - Essentials of Developing Windows Store Apps Using C#
   - Design Windows Store apps (20-25%)
   - Develop Windows Store apps (15-20%)
   - Create the user interface (20-25%)
   - Program the user interaction (20-25%)
   - Manage security and data (20-25%)
6. Exam 70-485 - Advanced Windows Store App Development Using C#
   - Develop Windows Store apps (15–20%)
   - Discover and interact with devices (15–20%)
   - Program user interaction (15–20%)
   - Enhance the user interface (15–20%)
   - Manage data and security (15–20%)
   - Prepare for a solution deployment (15–20%)
7. SAFETY
   - OSHA 10 Hour Construction (optional)
8. ROBOTICS
   - Lego EV3 Platform, Arduino, Roomba, USB Control
9. PROGRAMMING
   - C, C++, HTML, C#, Unity, CSS, Java, Javascript, Swift

Evaluation Basis:

    a.   **Assignments**   **60%**
    b.   **Attendance**   **20%**
    c.   **Service Calls**   **20%**

Policies on Course Grading:

- Exams will be delivered over the Internet using a course management utility.
- Each online exam will have a generous yet strictly adhered to closing date.
- **Failure to complete the exam by the closing date will result in a ZERO for that exam.**
- The final exam will be delivered in a proctored environment and the ability to use notes or books will not be allowed.

Lab Grading and Policy:

- All lab projects will be done individually or with a maximum of two per team.
- Lab projects will be collected on due date and graded for accuracy and content based upon the following:

√++ = 100 points	Responses are clear and well written / data is accurate / work is complete = Skilled in task.
√+ = 90 points	Responses are clear / minor errors in data collection / work is complete = Proficient in task.
√ = 80 points	Responses are vague or missing / errors in data collection / work is complete = Partly skilled in the task.
√- = 70 points	Responses are vague or missing / errors in data collection / work is incomplete = Unskilled in task.
√-- = 60 points	Work is submitted, but meets only minimal standards for submission = Unskilled in task.
0 points	Lab procedure is incomplete / lab not submitted / lab is not accepted beyond due date.

WCTC Grading Scale:

Letter	Grade Point	Scale
A+		98-100
A		95 – 97.9
A-		93 – 94.9
B+		90 – 92.9
B		87 – 89.9
B-		85 – 86.9
C+		82 – 84.9
C		79 – 81.9
C-		77 – 78.9
D+		75 – 76.9
D		72 – 74.9
D-		70 – 71.9
F		Below 70

Attendance Policy:

WCTC believes that regular and prompt attendance at each class session is extremely important. It is also the School's belief that excessive absenteeism and/or lateness reflect negatively upon student reliability and the School's ability to provide quality references to potential employers.

If the total number of legitimate absences is extensive, it may be impossible for the student to meet the objectives of the course. In such instances the instructor may assign a grade of Incomplete (I).

Lab Behavior:
Computer Careers is a course that requires the attention of students without distractions from others. You will not use personal electronic devices in the classroom in a manner that disrupts the instructor or other students! Examples include cell phones, radios, computer entertainment, or media devices. You will be asked to stop using these devices if in the judgment of the instructor your use of these devices is inappropriate.

Academic Honesty:
WCTC students are expected to be honest and forthright in their academic endeavors. Cheating is an act of deception by which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered. Items submitted for evaluation must represent your own work.

It is expected that you will make use of any resources available to you as become proficient in the course objectives. However, it is academically dishonest to represent the work of others as your own. Computer Careers requires program code development projects where it is permissible to use code developed by others, but the source of the code must be attributed. Additionally, you are expected to modify the code to meet the customized requirements of course projects. Any departure from academic honesty will be dealt with according to procedures outlined in the WCTC student handbook.