C++ PROGRAMMING

Instructor: Patrick Lagace   Email: plagace@sau29.org

Department: Business/Information Technology
Course Length: Semester Every day 87 minutes

Course Description

Introduction to C++ -
In this course students will develop a basic understanding of the C++ programming language. You will be able to design and implement simple programs dealing with numerical and string processing. You will be familiar with: Computers and Programming language history, Programming environment, Control Structures, Program problem solving, Variables & Constants, Naming & Declaring Memory Location, Selection Structures, Repetition structures Value returning Functions, Void Functions, One-Dimensional Arrays, Two-Dimensional Arrays, Strings

Prerequisites
Completion of Visual Basic with a C or better

BOOKS & Materials
Textbook:
An Introduction to Programming with C++ 6th Edition Diane Zak, Course technology,

---

Class grading will be weighted as follows:

Interim Assessments (Chapter exercises)   30%
Summative Assessments (Projects)   70%

Building Block Activities (collected). These activities:
- are used by teachers to help students learn new content and skills
- allow teachers to provide feedback to students as they are learning
- are a form of practice
- ensure students have the "building blocks" needed to engage in more complex thinking

Interim Assessments (30% of grade): These assessments:
- are used by teachers to periodically check how well students understand concepts and/or can apply skills that incorporate multiple "building blocks"
- May be reattempted within 2 days if the original grade was below an 80

Summative Assessments (70% of grade): These assessments:
- occur at the end of a unit of study
- require students to demonstrate mastery of content and skills, to engage in higher level strategic thinking, and/or to apply their knowledge and skills to real-world problems
- May be reattempted within 10 days if the original grade was below an 80

<u>Relearning and Reassessment</u>

Interim Assessments: Students who struggle on interim assessments will be given the opportunity to relearn the material and to reassess.

Summative Assessments: All students have the opportunity to improve their performance on summative assessments.

Timeline for relearning and reassessment: Generally, students have 3-5 school days after an assessment has returned to discuss it with their teacher. Within 7 school days of this meeting, the reassessment should be completed. Please note, individual circumstances may require slight changes to this timeline

Running Grades:

  The calculation of grades in the gradebook will be ongoing and will not restart every quarter. Quarter grades are merely snapshots of student performance at that point in time, but final course grades are not derived by averaging these quarter grades. Final course grades are from the cumulative performance on Interim Assessments (30%) and Summative Assessments (70%).

  This new grading system is a natural consequence of building student learning experiences around Building Block, Interim, and Summative Assessments. Interim and Summative Assessments are given when students have had ample time to learn and practice a set of academic skills. Having running grades allows students to take assessments when they are developmentally appropriate, rather than tying them to arbitrary calendar deadlines.

Five School-Wide Competencies/Work-Study Practices

Collaboration
Students will collaborate respectfully in groups to achieve a common goal.
Communication
Students will communicate in a variety of ways in diverse situations.
Creativity and Innovation
Students will generate and apply ideas in new ways.
Problem Solving
Students will solve problems critically and creatively.
Responsibility
Students will be accountable for themselves and show concern for others.

<u>Class Expectations</u>

1. Proper face masks will be worn correctly at all times. Zero tolerance policy on this
2. Desks and chairs will not be moved.
3. Equipment sanitization will done correctly
4. No food or drink in the classroom
5. Mask breaks will be outside only and as a group
6. One person to the restroom at a time
7. Be on time.
8. Complete makeup work immediately after being absent – within 3 days.
9. Be prepared when you come to class everyday
10. Monitor your progress during class and be aware of incomplete assignments.
11. Cheating/plagiarism will not be tolerated. See handbook for disciplinary action.

12. Logging someone else on your account or giving your password to someone to log on your account is unacceptable and will result in disciplinary action.
13. Acceptable use policy must be followed!!
14. Students may not use the Internet without permission.
15. Disciplinary action for tampering with classroom equipment is as follows:

    a. 1st offense – off computer for 5 days (school-wide-both PCs and Macs)
    b. 2nd offense – off computer for 10 days
    c. 3rd offense – off computer for a quarter

NH Computer Programming Competencies

Upon completion of their selected pathway program, all NH CTE students will:

CTE Professionalism and IT Essentials
- Use correct terminology, vocabulary and appropriate language to communicate effectively in the workplace
- Select and safely use appropriate tools, supplies, and equipment for a specific task or set of tasks.
- Employ effective time and project management strategies to complete work efficiently and proficiently.
- Apply math concepts, including measurement, operations, and higher mathematics to relevant applications and specific tasks.
- Demonstrate awareness strategies to safely work in a variety of workspaces and locations.

Learner will be able to:
- **Algorithms and Programming**:
  - Create meaningful and efficient programs including choosing which information to use and how to process and store it, breaking apart large problems into smaller ones, recombining existing solutions, and analyzing different solutions.

TOPICS
- Introduction to Programming
- Variables and Constants
- Data Formatting
- Selection Structures
- Repetition Structures
- Value Returning Functions
- Void Functions
- Arrays