Introduction to Computer Science

Ms. Shauna Ward   **Business Department**

Cox Mill High School   shauna.ward@cabarrus .k12.nc.us

704-260-6600

Welcome Students and Families. I am pleased that you are joining me in Introduction to Computer Science this semester!

Course Overview:

This twelve-unit course provides an introduction to coding and computer science by way of making and design, using the revolutionary new micro:bit micro-controller board, and Microsoft's easy and powerful MakeCode block-based coding environment. The course is a project-based curriculum, with a maker philosophy at its core, that provides a context for learning coding and computer science concepts through the act of making physical objects.

The course is comprised of twelve units with each focusing on specific computer science concepts and programming skills. Each unit includes three lessons that combine unplugged activities to introduce the concepts, guided or "birdhouse" activities to gain hands-on coding experience, self-directed independent projects to apply their new skills in creative ways, and assessments to test their knowledge and skill development. Teaching all twelve units and their included lessons will total approximately 22-30 hours of educator instruction/facilitation time and approximately 16-27 hours of student independent project-based activity time.

When students complete this course, they will have a good understanding of more than ten computer science concepts that can serve as the foundation for future study. They will develop powerful design skills that they can use in future projects of all types, whether they are designing 3D printed prototypes or creating apps that serve a real-world purpose.

Educators without a computer science background or who have never taught computer science before are encouraged to incorporate this course into their curriculum, regardless of their subject area, and should feel free to customize the curriculum to meet individual school or district resources and timeframe.

Class Expectations:

- *Be prompt:* You should be logged into class with all materials needed for class and ready to work.
- *Be prepared:* You should have all materials with you when you come to class. Make sure your computer is fully charged and ready to go.
- *Be respectful:* You should respect students and teachers. This includes such common courtesies as politeness, raising your hand to be recognized, listening while others are speaking, be attentive during presentations, and speak clearly.
- *Follow directions:* All students are expected to follow the above classroom expectations as well as any other directions for classroom or school activities on a daily basis.

Cameras during Synchronous Instruction

Can teachers require students to turn on their cameras during synchronous instruction?

Yes, teachers can ask/require student(s) to have cameras on during live synchronous instruction or turn camera on during designated times during the class period. For the first part of class cameras are required to be on during the presentation of information. I will instruct you when you can turn your cameras off.

Classroom Procedures:

- Participation is required by all students.

Virtual Expectations:

- Attendance will be taken during each class period.
- Students must be logged in during their scheduled class period.
- Students must be engaged and active while online. You must join the virtual classroom daily. Your microphone must be turned on mute unless directed otherwise.
- Students who engage in inappropriate behavior during the virtual lesson will be referred to the office. Students will be able to watch the replay that will be posted by 3:30 pm each day.

Materials Needed:

- A great attitude and excitement to learn.
- Fully charged computer, headphones, pencils, and paper.
- Micro:Bit Kit (Pick up from school)

Course Outline:

- **Lesson 1: Making with Micro:bit**
- **Lesson 2: Algorithms**
- **Lesson 3: Variables**
- **Lesson 4: Conditionals**
- **Lesson 5: Iteration**
- **Lesson 6: Mini-project**
- **Lesson 7: Coordinates**
- **Lesson 8: Booleans**
- **Lesson 9: Bits, bytes, and binary**
- **Lesson 10: Radio communication**
- **Lesson 11: Arrays**
- **Final Independent Project**

Grading:

Teachers will enter a grade of zero in PowerSchool for work that is not submitted. Teachers will provide students with the opportunity to recover the recorded zero within five school days of the date the assignment was due. Teachers have the option in how a student can recover a zero (i.e. accept the original assignment, give an alternate assignment, require additional work to demonstrate mastery, etc.). Teachers also have the option to deduct up to 10 points per day for submitted late work.

   a. Classwork assigned and completed in the same period is not subject to the five-school day grace period for late submission.
   b. Any assignment that teachers have graded, given feedback, recorded in PowerSchool, and returned is not subject to the five-school day grace period.
   c. Students should make up missed tests within five school days of an absence.
   d. Students who make the choice to participate in cheating and/or not submit work after the five-school day grace period may receive a zero for that assignment. Cox Mill High School administration will assign disciplinary consequences to students who repeatedly participate in cheating.

This course will be graded on three major areas. Below is the percentage breakdown for each component of the grading:

Classwork	20%
Projects	25%
Test	35%
Quizzes	20%
Total	**100%**

Grading Scale:

A - 90 – 100

B - 80 - 89

C - 70 –79

D - 60 – 69

F - 0 -59

Certification and Exams:

Learning assessment opportunities are provided for each unit and its associated lessons.
For more details about the assessment approach and printer-friendly versions, see the assessment guide.

   • Lesson assessments: "Do now," knowledge check questions, and exit ticket
   • Unit assessments: Quiz, independent project diary and rubric
   • Course assessment: Final project

Internet Use:

The Internet is used for the purpose of class assignments.

Assignments:

Assignments are due on the assigned date. Points will be deducted for late assignments. If you are absent from class, it is your responsibility to check Canvas of a list of assignments that were covered on the day you were out. Work sharing or cheating will result in a grade of zero for all parties involved.