EAGLE BUTTE HIGH SCHOOL

COMPUTER SCIENCE - COURSE OUTLINE

2025/2026

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The Computer Science curriculum blends science, technology, engineering, and math to teach "21st-century skills," or tools students need to have if they wish to succeed in the workplace of the future." It is an interdisciplinary approach to learning that encourages students to think critically, solve problems, and develop innovative solutions to real-world problems. These classes in high school are designed to provide students with a strong foundation in these subjects with the hope of providing a "spark" for future careers in computer science.

Computer Science is a potential 7-credit CTS-based course consisting, but not limited to, the following:

Year 1

- ***Computer Science 1*** (CSE 1010)

Students will explore the intricate workings of hardware, software, and processes. They will also be introduced to algorithms as problem-solving tools, programming languages in general, and the role of programming as a tool for implementing algorithms.

- ***Structured Programming 1*** (CSE 1110)

Students will learn how to write simple, structured algorithms and programs that input, process, and output data. Students also get to use some of the more basic operators and data types and follow a sequential flow of control.

- ***Robotics Programming 1*** (CSE 1240)

Students learn how to design, develop, implement, and debug robotics programs that employ standard structured programming constructs and simple data structures. Students also get to use an appropriate Robot Control Language (RCL) to bring their ideas to life.

- ***Robotics Programming 2*** (CSE 2240)

Students enhance their robotics programming skills by using procedural programming techniques and fundamental data structures. They will learn to analyze, modify, write, and debug robotics algorithms and programs, achieving modularity through subprograms like functions and data structures such as arrays.

- ***Structured Programming 2*** (CSE 1120)

Students learn how to add selection and iteration program control flow mechanisms to their programming repertoire. They will write structured algorithms and programs that use blocks to introduce an element of modularity into your programming practice.

- ***Forest Imagery*** (FOR 1050)

In this module, students will use drones and be introduced to ArcGIS software, which will help them interpret information from different types of visual data representations used in the forest industry.

- ***Forestry Intermediate Practicum*** (FOR 2950)

This course introduces students to the fundamental skills required for operating drones safely and effectively. Students will learn about drone components, flight principles, and regulations. The course will cover pre-flight checks, basic maneuvers, and emergency procedures. By the end of the course, students will be prepared to take the drone license exam. The skills learned in this section will then be applied to our forest encroachment project that will be completed in Cypress Hill Provincial Park.

Year 2

- ***Second Language Programming 1*** (CSE 2140)

Students who have mastered the basics of one programming language are allowed to learn the basics of another.

- ***Procedural Programming 1*** (CSE 2110)

Students enhance their understanding of procedural programming by transitioning from structured programming with program blocks to modular programming with subprograms. They will explore new design approaches and learn to identify problems suitable for modular algorithms and programs.

- ***Robotics Programming 3*** (CSE 3240)

Students advance their robotics programming skills by incorporating object-oriented programming (OOP). They will transition from procedure-based to object-oriented approaches, learning to design and write programs using objects in a client/server relationship.

- ***Forest Research & Development*** (FOR 3080)

In this module, students will expand upon their Forest Imagery module from year one to deepen their understanding of how GIS technologies influence perceptions of the forest industry.

- ***Client-Side Scripting*** (CSE 1210)

Students are introduced to Internet computing through the use of the Web-specific markup language HTML

Year 3 (Or additional options based on interest - 5 Credit Courses)

- ***Intro to AI 15*** (LDC 1026)

Various facets of artificial intelligence are integrated into our daily lives, and the algorithms power many of our apps. This course will explore the inner workings of artificial intelligence and its transformative influence on our ever-evolving world.

- ***Cybersecurity 15*** (LDC 1224)

In this course, students will be exposed to the inner workings of computer hardware and software, explore the intricacies of how networks connect, and dive into the world of encryption and cryptography. They will also learn the importance of safeguarding our increasingly digital world from unauthorized access, ensuring the privacy and integrity of data.

- ***Game Design and Development*** (LDC 1138)

In Game Design and Development 15, students practice designing and developing games through hands-on practice. Students will solve problems and create content, building the design and technical skills necessary to develop their own games. Students will further hone their skills in communication, project and time management, and creative problem solving while focusing on different aspects of asset creation, design, and coding.

Evaluation: Students will receive a separate mark for each course. Therefore, they must complete at least five modules as part of Eagle Butte's Computer Science program. The following evaluation methods will be used to grade each course.

Assignments - 30%	**Quizzes - 30%**
Projects - 30%	**Participation - 10%**

Class Policies

A. ASSIGNMENTS:

- **All assignments are due at the beginning of class**.
- An assignment will not be considered late if you have a valid, excused reason for being absent the day it is due, BUT the assignment will be due the day you return

B. ABSENCES:

- You must be in class. We cover quite a bit of material quickly, and it is very difficult to catch up if you have been away even for one day. As well, there are in-class assignments, quizzes and activities that you will miss which you may not be able to make up at a later date.
- If you are present, it is YOUR responsibility to obtain any notes or assignments that need to be completed. Be sure to do this during TAG or before/after school. NOTE: Just before class or during class are inappropriate times for getting missed work.

C. LATES:

- **Students are required to be in class on time, with their Chromebook, appropriate texts, notebooks, paper and writing utensils.** Students without the necessary materials will be asked to locate them and marked late when they return.
- Students who are repeatedly late will be referred to the administration.

D. BEHAVIOR:

- Behaviour that prevents other students from reaching their potential is not expected, nor will it be tolerated. As such, detentions will be given for excessively disruptive or inappropriate behaviours. If a detention is missed, the student will receive additional detentions. If these are missed, students will be referred to the administration.
- Students who are repeatedly disruptive will be referred to the administration.

E. CELL PHONES:

Cell phones are not permitted for use during class time: this includes in the bathrooms and hallways while classes are in session. Cell phones are to be left in your lockers or placed somewhere that will not be distracting. Failure to do so will result in my asking you to put your phone in your locker. Repeated incidents will be referred to the administration.

G. SUPPLIES:

- Chromebook
- Headphones