PROGRAMMING/SOFTWARE DEVELOPMENT *Full Year*
Information Technology Education

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PROGRAM DESCRIPTION: This course is a college level introduction to computer science concepts. These concepts include data representation/abstraction, recursion, software engineering, sorting/searching, and object oriented programming. Student's problem-solving skills will be developed through designing, implementing, and executing computer programs. The Java programming language will be used for the majority of the class. Students will work with web, console, mobile and database development. Students will be prepared to take the AP Computer Science Principles and AP Computer Science A exams. They will have opportunities to participate in programming competitions against other schools and gain marketable skills before they graduate high school.

```
public void takeComputerScience()
{
    //Code
    //the
    //future
    //@CTEC

    designAndDevelopSoftware();
    createAndroidAndAppleApps();
    learnToHack();
    buildDatabases();
    beAmazing();
}
```

High School Credit: CTE credit or elective credit: Up to 4 credits total and a possible math or science credit
Concurrent Credit: 8 college credits <u>required</u>. Student is responsible to register and pay for concurrent enrollment classes at SLCC. Other credits maybe be included.
AP Credit: AP Computer Science tests available
Additional Information: Compete in programming competitions
Industry Certifications: MTA, Adobe
Skills Certifications: Utah State Skills Certificate Tests
Requirements: Secondary Math II completed. All 2nd semester classes require passing the 1st semester (College requirement).
Keyboarding and basic computer skills.

COURSE DESCRIPTIONS: See Concurrent Enrollment Appendix.

CSIS 1400 Fundamentals of Programming: Computer science is one of the top career fields for the future. Learn the basics of Java programming including GUI development.

AP Computer Science Principles: Students will use mobile app development to learn about computer science and software development principles. Students will create mobile applications and develop solutions to real world topics.
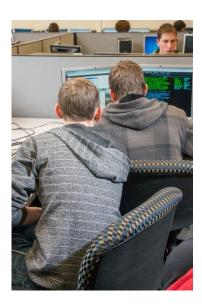
CSIS 1410 Object Programming: Student will create more complex GUI applications including games using Java and C#. Build more complex applications that involve data structures and prepare for the AP Computer Science Exam.

Database Design: Students will design and implement databases using SQL and Firebase. Students will link database to Java and iOS front end. Students will extract and analyze data from databases.

Costs/Fees for the 2020-2021 school year: Pending school board approval.

Career Possibilities:

Computer Programmer
Game Developer
Software Engineer
Computer Engineer

Software Developer
Database Developer
Database Administrator

"I really enjoyed the programming class at CTEC because of the fun projects, and the great instruction. It is a lot of hands-on learning, which makes concepts easier to understand. My favorite project that we did was programming Lego robots in Java". L. Wyness