

## Technology

### **CTEV 629A: Foundational Computer Science Concepts (3 Credits)**

This course will cover the foundational computer science concepts that all educators should know and understand in order to successfully teach computer science to all age groups. The Learner will explore how computers store and use information, how algorithms are used to solve problems, program development using variables and control structures, common troubleshooting strategies, how hardware and software work together, and the implications of computing on society.

### **CTEV 629B - Methods to Teach Computer Science (3 Credits)**

This course provides different methods to teach computer science in the classroom through curriculum development, learning theories, pedagogical methods, lab instruction and research, diverse learning approaches, and professional ethics. The Learner will complete this course with a toolkit of resources to use in the computer science classroom.

### **CTEV 629C - Methods to Teach Computer Applications (3 Credits)**

Welcome to the 21st Century classroom where students apply their knowledge of computer applications to create digital artifacts using word processing, spreadsheets, presentations tools, publishing tools, and digital citizenship through classroom collaboration and business simulation. The Learner of this course will be prepared through various teaching methodologies to guide their students in the study of computer applications so they may become college and career ready. Prior knowledge of basic productivity tools such as Google Apps for Education, Word, Excel, or PowerPoint is preferred but not required.

### **CTEV 629D - Practical Application of Computer Science Across Disciplines (3 Credits)**

Computer Science education is typically thought of as a specialized subject area primarily for those who plan to explore a career path in this field. As the world around us becomes more and more technology-driven, it is imperative that students of all ages learn the foundations of computer science to be successful in their future endeavors, from post-secondary pursuits to any chosen career path. This course will explore practical applications of computer science education across all subject areas so as to provide a well-rounded experience for the student who will be teaching this content in an integrated fashion in our digital age

### **CTEV 629E - Beginning Programming Using JavaScript (3 Credits)**

Due to its many different flavors and applications, JavaScript is one of today's most widely used and popular languages. This course will give the Learner knowledge of the JavaScript language and a deep understanding of the foundations of computer science and programming. Topics include data types and operators, program structure, data structures and functions, and bugs and error handling. Programming JavaScript will be the learner's gateway to understanding the tools of computer science.

### **CTEV 629F - Computer Programming with Java (3 Credits)**

Now that the student has a solid programming foundation from CSE 650E, this course is designed to move the students to more advanced concepts. Topics include Java program structure, methods, classes & objects, advanced array concepts, file input and output, inheritance, and Graphical User Interfaces (GUI) using Java Swing and JavaFX. The Learner will emerge from this class with the knowledge to guide their students through Computer Science and programming.