COMPUTER STUDIES

Grade	Course	Type	Prerequisite	Course Details
10	TEJ2OI Computer Technology	Open		**Beginner Computer Engineering:** This course builds a core understanding of computer structures and functional concepts while developing skills with electronics, computing concepts, and programming. Presented using a problem-solving model, students design, and build automated and robotic systems, while learning about input and output circuits and devices.
10	ICS2OI Introduction to Computer Studies	Open		Introduction to computer programming using 'Python'. Students need good math skills for this course. This course introduces students to computer programming. Students will plan and write simple computer programs by applying fundamental programming concepts, and learn to create clear and maintainable internal documentation. They will also learn to manage a computer by studying hardware configurations, software selection, operating system functions, networking, and safe computing practices. Students will also investigate the social impact of computer technologies, and develop an understanding of environmental and ethical issues related to the use of computers.

Grade	Course	Type	Prerequisite	Course Details
11	TEJ3MI Computer Engineering Technology	University/ College	**TEJ2OI** **Highly Recommended**	**Intermediate Computer Engineering:** Examines computer systems and control of external devices. You will develop knowledge and skills in electronics, robotics, programming, and be introduced to networking. Students design and build systems to respond to sensors and control devices.Projects are presented in the context of social, and environmental impact and responsibility.
11	ICS3CI Introduction to Computer Programming	College		Computer programming with the programming language 'Python'. Students need good math skills for this course. This course introduces students to computer programming concepts and practices. Students will write and test computer programs, using various problem-solving strategies. They will learn the fundamentals of program design and apply a software development life-cycle model to a software development project. Students will also learn about computer environments and systems, and explore environmental issues related to computers, safe computing practices, emerging technologies, and post-secondary opportunities in computer-related fields.
11	ICS3UI Introduction to Computer Science	University		Computer programming with the programming language 'Python'. Students need good math skills for this course. This course introduces students to computer science. Students will design software independently and as part of a team, using industry-standard programming tools and applying the software development life cycle model. They will also write and use subprograms within computer programs. Students will develop creative solutions for various types of problems as their understanding of the computing environment grows. They will also explore the environment and ergonomic issues, emerging research in computer studies, and global career trends in computer-related fields.

Read Grade 12 course descriptions on the next page

COMPUTER STUDIES

Grade	Course	Type	Prerequisite	Course Details
12	TEJ4MI Computer Engineering Technology	University/ College	TEJ3MI or ICS3UI	**Specialized Computer Engineering:** This course will extend your understanding of computer systems and computer interfacing with external devices. You will learn more about the fundamental concepts of electronics theory and practice, robotics, programming, and networks. A greater emphasis is placed on problem solving and design. Related environmental and societal issues will be examined and you will explore postsecondary pathways leading to careers in computer technology.
12	ICS4CI Computer Programming	College	ICS3CI	Advanced computer programming with 'JAVA'. Students need good math skills for this course. This course further develops students' computer programming skills. Students will learn object-oriented programming concepts, create object-oriented software solutions, and design graphical user interfaces. Student teams will plan and carry out a software development project using industry-standard programming tools and proper project management techniques. Students will also investigate ethical issues in computing, and expand their understanding of environmental issues, emerging technologies, and computer-related careers.
12	ICS4UI Computer Science	University	ICS3UI	Advanced computer programming with 'JAVA'. Students need good math skills for this course. This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyze algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.