

COMPUTER SCIENCE (CPSC)

This is a list of the Computer Science (CPSC) courses available at KPU.

CPSC 1100 **3 Credits**

Introduction to Computer Literacy

Students will learn concepts and trends in computer science. Students will gain an understanding of the terminology, current issues and changes in the technology of computing. Students will learn to use major application packages, such as word processing, spreadsheet and relational database. Students will develop structured programs using Visual Basic for Applications. Students will also examine social and ethical issues in computing.

Transferable (refer to transfer guide)

CPSC 1103 **3 Credits**

Introduction to Computer Programming I

Students will learn fundamental programming concepts using the C++ programming language. Principles of problem solving and algorithm design will be introduced as well as basic techniques for data representation and manipulation. Students will learn how to design, develop, test and document well-structured programs.

Prerequisites: C+ in Math 12 or B in CPSC 1100 or B in CISC 1105 or B in CBSY 2205 or equivalent

Attributes: QUAN

Transferable (refer to transfer guide)

CPSC 1204 **3 Credits**

Introduction to Computer Programming II

Students will learn fundamental programming design and implementation concepts and skills in the context of Java. Students will review elementary concepts, study more advanced data types such as: data structures, program design techniques, object-oriented design and programming. Students will also be introduced to concepts and design principles of graphical user interfaces. Students will learn methods for good design and style.

Prerequisites: CPSC 1103

Attributes: QUAN

Transferable (refer to transfer guide)

CPSC 1250 **3 Credits**

Introduction to Computer Design

Students will study the fundamental principles of computer processing hardware, including digital logic circuit design, data representation, memory structure and organization, and program execution. They will also learn to design and implement assembly language programs.

Prerequisites: CPSC 1103

CPSC 2302 **3 Credits**

Data Structures and Program Organization

Students will learn fundamental tools of data and program organization, including structured problem solving, data abstraction and object-oriented programming. They will develop and practice skills in formulating ideas into algorithms, in refining algorithms into well-structured programs for solving practical problems, and in using analysis tools to make knowledgeable choices as to the best data structure for a particular application.

Prerequisites: CPSC 1204 or INFO 2313

Attributes: QUAN

Transferable (refer to transfer guide)

CPSC 2405 **3 Credits**

Introduction to Discrete Mathematics I

This course introduces students to applications of discrete mathematics in computing science. Mathematical concepts such as set theory, logic, formal reasoning, induction, counting, relations and functions, formal languages, automata theory and graph theory are the main focus.

Prerequisites: CPSC 1103 or (B in Computer Science 12 and C+ in Math 12)

Attributes: QUAN

Transferable (refer to transfer guide)

CPSC 3110 **3 Credits**

Simulation

Students will learn computer simulation and modeling techniques. They will learn simulation methodologies and techniques for random number and stochastic variate generation. They will also learn simulation design, analysis and estimation based on endogenously created data, simulation model validation and variance reduction. Students will implement simulation models for real-life applications using a computer programming language.

Prerequisites: (CPSC 2302 or INFO 2315) and MATH 2315

Transferable (refer to transfer guide)