Hope Christian School

Option Courses

E-Dynamic Courses

American Sign Language 1A and 1B (5 credits – special project 15)

Begin learning a second language, but one that is unique and practical! American Sign Language is becoming a "must have" skill for many people and this course will get you started in sign, the alphabet and numbers, general communication, and conversation with others. This is an independent study program offered by e-dynamic. There is a midterm and final exam for these two courses. Once you register, you must complete or pay a $75 unenroll fee if you choose to withdraw before completion, as the school must pay for a "seat" in the program.

Anatomy and Physiology (3 credits – HCS1050, HS1080, HCS2050)

Learn about how the human body is organized through a deep inspection of the skeletal, muscular, nervous, and cardiovascular systems. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee if you choose to withdraw before completion, as the school must pay for a "seat" in the program.

Cosmetology 1 – Cutting Edge Styles (3 credits – COS1010, CSO2210, EST1020)

Is one of your dreams to work or open a hair or esthetician's salon? This course will introduce you to the business of cosmetology, dealing with clients and services, legal and ethical standards plus a bit on nails, skin, and hair. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee if you choose to withdraw before completion, as the school must pay for a "seat" in the program.

Interior Design (3 credits – special project 15)

If you are always rearranging the furniture in your bedroom, or imagining your own house and how you would design in – then try out this course and learn the basics of decorating, trends in the market, and designing your space. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee if you choose to withdraw before completion, as the school must pay for a "seat" in the program.

Business Communications 1A (3 credits – HSS1090, MAM1030, MAM2010)

Being able to communicate in the business world is an essential skill in the 21st century. Reading body language, listening for cues, communicating in terms and groups – these are all important skills. Remember, you have to stand out from the crowd – so let your business communication skills help you out! There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee as the school must pay for a "seat" in the program.

Business Information Management 1A (4 credits – MAM1010, MAM1040, COM1005, COM1055)

If you have any entrepreneurial spirit in your soul – you will want to start and run your own business – but it isn't as easy as you think – you have to be prepared – you have to know the legalities – what about equipment and infrastructure? And today – having a web presence is the most important element that is often overlooked. In this course you will learn how to set up a business, marketing, accounting, finance, e-commerce, and webdesign. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee as the school must pay for a "seat" in the program.

Management Introduction 1A – (4 credits – MAM1010, HSS1080, MAM3020, MAM3030)

Explore foundational management concepts such as leadership, managing teams, entrepreneurship, global business, finance, and technology and innovation. Engage in a capstone that pulls all of the concepts you've learned together, allowing you to see how management ideas can be applied to a business case study. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee as the school must pay for a "seat" in the program.

Marketing Foundation 1A – (4 credits, special project 15)

Explore the role of marketing in business in addition to the basics of business management, customer service, and economics. Also, you will examine how to identify target markets, perform market research, and develop successful marketing strategies. Finally, the legal and ethical considerations of business and marketing are discussed along with the impact of government on business. There is a midterm and final exam for this course. Once you register, you must complete or pay a $75 unenroll fee as the school must pay for a "seat" in the program.

Social Science Courses

SSN2171 - Personal Psychology (3 credits)

SSN2172 - General Psychology (3 credits)

SSN2176 - Sociology (3 credits)

SSN3171 - Experimental Psychology (3 credits)

SSN3166 – World Geography (3 credits)

SSN3161 – World Religions (3 credits

LDC2088 – Life of Christ (5 credits)

LDC3088 – Christian Apologetic (5 credits)

SSN3154 – Aboriginal Studies (5 credits – must complete Social Studies 10/20 with HCS)

Fine Arts Course

Art 10/20/30 – all three 5 credit courses are offered during the school year. Each course explores several different mediums and build on one another.

Choir 10/20/30 – all students participate in the Central Alberta Homeschool Choir Performances

Drama 10/20/30 – all students participate in the Drama program offered by Mr. and Mrs. Zepick in Central Alberta

Private Music Option – If you have completed your Royal Conservatory Examinations you may be eligible for credits – other programs will be assessed for compatibility with RCM

Music 10/20 – if you are taking private music lessons but not RCM – you can receive credits for your work and performance

Second Languages

French 10/20/30

Spanish 10

Career and Technology Courses

Agriculture

AGR1010 – Introduction to Agriculture - Students explore and gain an understanding of the diversity of agricultural activity in Alberta, Canada, and the global community. They will also learn about the economic, environmental, and social significance of agriculture.

AGR1040 – Animal Basics - Students learn to identify and demonstrate the basic steps involved in raising and caring for a domestic animal. Students gain an understanding of general care to ensure animal health. Students may choose between a horse, cow, sheep, cat or dog to focus their studies on.

AGR2020 Equine Husbandry and Welfare – Students learn about the care and handling of horses, stabling, husbandry and general welfare.

AGR2045 – Companion Animals – students learn the qualities and characteristics of animals suitable for companionship including dogs, cats, rodents, and reptiles. Lots of information is provided about different breeds and their pros and cons.

AGR3000 – Agriculture Safety – students learn about workplace safety from an agriculture perspective. This course is mandatory for all Green Certificate modules.

Photography

COM1005 – Visual Composition - students learn to employ fundamental elements and principles of design for various media and gain a strong foundational multidisciplinary experience in preparation for other Communication Technology courses.

COM1205 – Introduction to Photography - Introduction students develop essential skills in camera use with a focus on basic composition, set-up, and examination of exposure. Students operate a camera to capture images and produce final display proofs.

COM1215 – Photograph Exposure - Students learn the technical and creative uses of aperture, shutter speed and ISO, and demonstrate how combinations of the three elements give very different results. Students also discover how a correct exposure is obtained through the combination of shutter speed, aperture and ISO, which make up the photographic triangle. Access to a camera with the ability to control aperture and shutter speed independently, and to processing and display equipment

COM1275 – digital Processing - Students learn the fundamentals of consumer-based digital image acquisition, management, composition, manipulation and editing software to improve image composition

IMPORTANT – THE ABOVE FOUR COURSES ARE TAUGHT AS ONE UNIT FOR 4 CREDITS.

Community Care Services

CCS3110 – Early Learning and Child Care 1 - Students investigate the roles and responsibilities of a childcare worker, and develop communication, observation and skills for guiding behaviour. Access to children *between the ages of 0–5* in any of the following ways: a licensed child care centre; a licensed preschool; a licensed or approved family day home; a licensed out-of-school care program; or, a school-based pre-Kindergarten program

CCS3120 – Early Learning and Child Care 2 - Students will develop skills to assist in promoting the physical, intellectual and language development in children from birth to age six.

CCS3130 – Early Learning and Child Care 3 - Students will develop skills to assist in promoting the social-emotional and creative development with children from birth to age 6. Students also will examine the development of learning through play

CCS3140 – Early Learning and Child Care 4 - Students will examine family dynamics and issues, as well as the cultural diversity of the children and families under their care. Students also will develop skills to support and promote the cultural identity of children

CCS3150 – Early Learning and Child Care 5 - Students will learn appropriate practices related to routines in a child care program. Students also will plan for the health, safety and well-being of children in child care programs

IMPORTANT – THE ABOVE FIVE COURSES HAVE TO BE TAKEN SEQUENTIALLY AND UPON COMPLETION, STUDENTS CAN APPLY FOR THEIR DAY CARE WORKER 1 CERTIFICATION WHICH ALLOWS THEM TO WORK IN ANY DAYCARE IN ALBERTA.

Fashion Studies

FAS1000 – Fashion Illustration - 1 introduces students to the world of fashion illustration and the work of a fashion artist. They learn to sketch a croquis, incorporate simple gestures. Then, they apply these skills to create fashion illustrations.

FAS1030 – Sewing Fundamentals - students learn how to use and care safely for sewing and pressing equipment, and to apply these skills in project assembly. Students need access to sewing-related equipment and supplies. This course is the prerequisite for most other Fashion Studies courses.

FAS1060 – Creating Accessories 1 - Creating Accessories 1 students use basic sewing skills and techniques to construct a home or personal accessory. Access to sewing-related equipment and supplies is essential.

FAS1130 – construction Fundamentals 1 - Construction Fundamentals 1 students learn how to determine pattern size, choose a suitable pattern and fabric, make pattern alterations, and prepare the fabric and pattern for layout. These skills will be applied during the assembly of a simple garment.

FAS1190 – Textile Arts 1 - students explore various yarn or textile art techniques and apply basic skills while creating a project. Students can choose from knitting, crocheting, quilting or a textile art of their choice

Financial Management

FIN1010 – Personal Financial Information - allows students to explore such concepts that affect the finances of an individual, including budgeting for living on their own, income and expenditures and more.

FIN1015 – Accounting Prep - Accounting Prep introduces students to accounting and terminology unique to financial accounting. Students become familiar with financial statements, generally accepted accounting principles and how to prepare for the process of starting up a business

Foods

FOD1010 – Food Basics - students learn safe and sanitary food handling procedures, equipment care, comprehension of recipes, and the importance of efficient work habits. Students need access to a personal or commercial food preparation facility**. This course is the pre-requisite for all subsequent** Foods courses. There is no final exam for this course

FOD1020 – Contemporary Baking - , students develop an demonstrate and understanding of traditional and contemporary baking focusing on basic measuring techniques, preparation methods, role of ingredients and the proper use of equipment for baked goods. This course is the pre-requisite for all other baking courses.

FOD1030 – Snacks and Appetizers - students apply the importance of snacks and appetizers related to lifestyle, by making nutritious, as well as delicious snacks and appetizers. Students need access to a personal or commercial food preparation facility. There is no final exam for this course

FOD1040 – Meal Planning - students develop an understanding of planning, preparation, and evaluation of balanced healthy meals.

FOD1060 – Canadian Heritage Foods – students will explore the roots of many of the Canadian foods including foods the pioneers consumed.

FOD2040 – Cake and Pastry - students expand their knowledge and skills in the production of a variety of cake and pastry products

FOD2070 – Soups and Sauces - students combine stocks with various thickening agents to produce hearty soups and sauces.

FOD2090 – Creative Cold Foods - students learn to combine nutrition and creativity in the preparation of salads and sandwiches

Health Care Services

HCS3000 – Workplace Safety Systems - students will gain knowledge, skills, and attitudes in workplace health and safety preparing them for workplace orientation to off-campus education learning experiences, and the transition to the world of work. This course is required for all off-campus courses such as RAP and Work Experience. Students will receive a certificate upon completion with a 70%+

HCS3010 – Workplace Safety Practices - This course will benefit the academic growth of students as well as keep them safe as they begin their working lives. In Workplace Safety Practices, students explore workplace safety principles and practices, and apply these principles and practices to a variety of contexts. Students will receive a certificate upon completion with a 70% +

HCS1010 – Health Services - students examine fundamental attitudes, knowledge, and skills to prepare for further study in career pathways in health, recreation, and community services. Concepts related to the determinants of health, the dimensions of wellness, basic principles of anatomy, physiology, and disease, and basic safety and reporting protocols for providing care to individuals in health, recreation, volunteer, and community support settings are reviewed

HSS3020 – Mental Health and Wellness – with mental health being so important after the past pandemic, students will acquire the attitude, skills, and knowledge necessary for achieving and maintaining mental health and wellness.

HSS1020 – Nutrition and Wellness - Students learn the importance of nutrition and hydration for the promotion and maintenance of physical, emotional and social health and wellness throughout life. Students evaluate food and supplement choices, the effects of activity on nutritional requirements and the use of labels to improve daily nutritional intake at all ages

Mechanics

MEC1040 -Engine Fundamentals -students will learn the tools and techniques of engine tuneups with a 2 cycle engine. A lawn mower or dirt bike are needed to complete the course.

Information Processing

INF1030 – Word Processing 1- Students are introduced to the proper use of word processing software, including document creation, editing and printing of properly formatted documents.

INF1070 – Digital Presentation - Students develop skills with tools used for computerized presentations involving text, data, graphics, sound and animation

IMPORTANT – THE ABOVE TWO COURSES PLUS E-LEARNING WITH CANVAS ARE MANDATORY COURSES FOR ALL STUDENTS ENROLLED AS FULL TIME STUDENTS WITH HOPE CHRISTIAN SCHOOL.

INF1060 – Spreadsheeting - Students develop skills in the proper use of spreadsheet software through general data manipulation and personal record keeping

INF2020 – Keyboarding - Students enhance their occupational level keyboarding competence of all keystroke functions, using unedited, edited and straight copy material. Students will have to achieve a WPM between 30 and 50 and a numerical keystroke speed between 100 and 125

Wildlife

Students can achieve credits if they have a certificate of completion for any of the following:

Alberta Hunter's Safety

Firearms Acquisition – Minor

Boating Safety

Fishing Program (not just license)

Swimming

Students can achieve credits if they have a certificate of completion for any of the following:

Bronze Cross

Bronze Medallion

Aqua Emergency Care

Lifeguard

Swimming Instructor

Courses to be added in the future include the following:

MAM1010 – Marketing and Management

MAM1020 – Quality Customer Service

MAM3010 – The Business Organization

MAM3020 – Business in the Canadian Economy

MAM3030 – The Global Marketplace

MAM3040 – Promotion – Sales Techniques

MAM3050 – Distributing Goods and Services

LGS1010 – Private Law

LGS1030 – relationship Law

LGS2010 – Family Law

LGS2020 – Employment Law

LGS2030 – Environmental Law

LGS3040 - Negligence

LGS3050 – Small Business Law

LGS3080 – Criminal Law

CTS – Bundles

PC Hardware and Software – Cisco IT Essentials
(*NOTE: Use the following 5 course codes to register.)

- NET2020 Workstation Technology and Operations
- NET2030 Network Structures
- NET2080 Laptops and Peripherals
- NET2110 Telecommunications
- NET1910 Project A for Cap Stone Project OR INF3010 Hardware and Software Analysis

Course Description

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. The IT Essentials curriculum includes hands-on labs that provide practical experience. Virtual tools help you hone your troubleshooting skills and practice what you learn. The course also provides a learning pathway to Cisco CCNA.

Curriculum Objectives

The primary objective of this course is to help students prepare for entry-level IT positions in a variety of working environments. Students gain confidence with the components of desktop and laptop computers by learning the proper procedures for hardware and software installations, upgrades, and troubleshooting.

By the end of the course, students will be able to complete the following objectives:

- Define information technology (IT) and describe the components of a personal computer.
- Describe how to protect people, equipment, and environments from accidents, damage, and contamination.
- Perform a step-by-step assembly of a desktop computer.
- Explain the purpose of preventive maintenance and identify the elements of the troubleshooting process.
- Install and navigate an operating system.
- Configure computers to connect to an existing network.
- Upgrade or replace components of a laptop based on customer needs.
- Describe the features and characteristics of mobile devices.
- Install and share a printer.
- Implement basic physical and software security principles.
- Apply good communications skills and professional behavior while working with customers.
- Perform preventive maintenance and advanced troubleshooting.
- Assess customer needs, analyze possible configurations, and provide solutions or recommendations for hardware, operating systems, networking, and security.

Career Pathways

IT Essentials is ideal for students seeking entry-level IT positions in companies, government agencies, educational institutions, or service providers, or to work for themselves.

Job titles include - Help Desk Technician, IT Support Technician, Field Service Technician, Support Engineer, Network Support Technician, Network Support Engineer, and more.

Industry certification

Helps prepare for CompTIA A+ certification exam(s).

Prerequisite: None

Cisco Certified Network Administrator (CCNA) Introduction to Networks - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- NET2040 Network Media and Devices
- NET2050 Open System Interconnection
- NET2060 Network Protocols
- NET3100 Network Media & Device Security
- NET2920 Project B for Cap Stone Project

The 5 courses listed above are bundled to complete the 5 credit version of CCNA Discovery 1

— Networking for Home and Small Business

NOTE: This is a 5 credit bundle. Students must register in ALL of the 5 credits listed above.

Course Description

Introduction to Networks is the first course in the Cisco CCNA Routing and Switching curriculum teaching students the architecture, structure, functions and components of the Internet and other computer networks. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

Curriculum Objectives

Students who complete Introduction to Networks will be able to perform the following functions:

- Understand and describe the devices and services used to support communications in data networks and the Internet
- Understand and describe the role of protocol layers in data networks
- Understand and describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments
- Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks
- Explain fundamental Ethernet concepts, such as media, services, and operations
- Build a simple Ethernet network using routers and switches
- Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations
- Utilize common network utilities to verify small network operations and analyze data traffic

Career Pathways

CCNA Routing and Switching curriculum builds the skills you need to get hired and succeed in jobs related to networking computers, devices, and things. Whether you go for that first job or specialize with more study, CCNA is a great foundation.

Career pathways include: network technician, support engineer, network administrator, network designer, network engineer, and more.

Industry certification

Helps prepare for Cisco CCNA certification exam(s).

Prerequisite: PC Hardware and Software - IT Essentials

Cisco Certified Network Administrator (CCNA) Routing and Switching Essentials - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- NET2070 Local Area Networks
- NET3060 Wide Area Networks
- NET2920 Project C to help cover course content
- NET2930 Project D to help cover course content
- NET Project for Cap Stone Project

Course Description

Routing and Switching Essentials is the second course in the CCNA Routing and Switching curriculum teaching students how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPng, single-area and multi- area OSPF, virtual LANs, and inter-VLAN routing.

Curriculum Objectives

Students who complete the Routing and Switching Essentials course will be able to perform the following functions:

- Understand and describe basic switching concepts and the operation of Cisco switches
- Understand and describe the purpose, nature, and operations of a router, routing tables, and the route lookup process
- Understand and describe how VLANs create logically separate networks and how routing occurs between them
- Understand and describe dynamic routing protocols, distance vector routing protocols, and link-state routing protocols
- Configure and troubleshoot static routing and default routing (RIP and RIPng)
- Configure and troubleshoot an Open Shortest Path First (OSPF) network
- Understand, configure, and troubleshoot access control lists (ACLs) for IPv4 and IPv6 networks
- Understand, configure, and troubleshoot Dynamic Host Configuration Protocol (DHCP) for IPv4 and IPv6 networks
- Understand, configure, and troubleshoot Network Address Translation (NAT) operations

Career Pathways

CCNA Routing and Switching curriculum builds the skills you need to get hired and succeed in jobs related to networking computers, devices, and things. Whether you go for that first job or specialize with more study, CCNA is a great foundation.

Career pathways include: network technician, support engineer, network administrator, network designer, network engineer, and more.

Industry certification

Helps prepare for Cisco CCNA certification exam(s).

Prerequisite: Grade 11 or higher & Introduction to Networks

Cisco Certified Network Administrator (CCNA) Scaling Networks - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- NET3070 Routing Fundamentals
- NET3090 Network Management
- NET3910 Project D to help cover course content
- NET3920 Project E to help cover course content
- NET Project for Cap Stone Project

Course Description

Scaling Networks is the third course in the CCNA Routing and Switching curriculum teaching students how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP.

Curriculum Objectives

Students who complete the Scaling Networks course will be able to perform the following functions:

- Understand, configure and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+), and EtherChannel
- Understand, configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network
- Understand, configure, and troubleshoot wireless routers and wireless clients
- Configure and troubleshoot routers in a complex routed IPv4 or IPv6 network using single-area OSPF, multiarea OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP)
- Manage Cisco IOS® Software licensing and configuration files

Career Pathways

CCNA Routing and Switching curriculum builds the skills you need to get hired and succeed in jobs related to networking computers, devices, and things. Whether you go for that first job or specialize with more study, CCNA is a great foundation.

Career pathways include: network technician, support engineer, network administrator, network designer, network engineer, and more.

Industry certification

Helps prepare for Cisco CCNA certification exam(s).

Prerequisite: Grade 11 or higher & Routing and Switching Essentials

Cisco Certified Network Administrator (CCNA) Connecting Networks - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- NET3080 Internet Processes
- NET3110 Telecommunications 2
- NET Project to help cover course content
- NET Project to help cover course content
- NET Project for Cap Stone Project

Level: Grade 11 or higher and taken Scaling Networks (Cisco CCNA).

Course Description

Connecting Networks is the fourth and final course in the CCNA Routing and Switching curriculum covering the WAN technologies and network services employed by converged applications in a complex network. By the end of this course, students will be able to configure and troubleshoot network devices and resolve common issues with data link protocols.

Curriculum Objectives

Students who complete the Connecting Networks course will be able to perform the following functions:

- Understand and describe different WAN technologies and their benefits
- Understand and describe the operations and benefits of virtual private networks (VPNs) and tunneling
- Understand, configure, and troubleshoot serial connections
- Understand, configure, and troubleshoot broadband connections
- Understand, configure, and troubleshoot tunneling operations
- Understand, configure, and troubleshoot Network Address Translation (NAT) operations
- Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow
- Understand and describe network architectures:
    - Borderless networks
    - Data centers and virtualization
    - Collaboration technology and solutions

Career Pathways

CCNA Routing and Switching curriculum builds the skills you need to get hired and succeed in jobs related to networking computers, devices, and things. Whether you go for that first job or specialize with more study, CCNA is a great foundation.

Career pathways include: network technician, support engineer, network administrator, network designer, network engineer, and more.

Industry certification

Helps prepare for Cisco CCNA certification exam(s).

Prerequisite: Grade 11 or higher & Scaling Networks

Video Game Design – Fundamentals of a Video Game Design - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- COM1005
- COM1015
- COM1145
- COM2145
- NET1910

Level: Grade 9 or higher.

Course Description

Lessons provide a top-level overview of the video game design process, from the beginning of the game build to the sales and marketing of the final product. This course is designed to take any student from novice to advanced skills and knowledge.

Curriculum Objectives

Students who complete the Video Game Design – Fundamentals of a Video Game Design course will be able to perform the following functions:

- Describe the roles and responsibilities of team members on a video game design team
- Describe, classify, and categorize the different gaming genres
- Discuss how video games affect behavior, cognitive development, and motor skills
- Compare and contrast perspective, scene design, and basic animation
- Build applied mathematics logic statements
- Understand, configure, and troubleshoot Network Address Translation (NAT) operations
- Describe the techniques used in industry to evaluate games
- Describe and create a development plan for a video game design
- Describe how video games are marketed and sold
- Data centers and virtualization

Career Pathways

Video Game Design – Fundamentals of a Video Game Design curriculum builds the skills you need and is the first step to get hired and succeed in jobs related to video game design. When you go for more study, this course is a great foundation.

Career pathways include: any member of the production team that make up the video game design profession.

Industry certification

NA

Prerequisite: None

Video Game Design – Composition of a Video Game - approximately 110 hours.

(NOTE: Use the following 5 course codes to register.)

- COM1035
- COM2035
- COM3145
- DES1020
- DES1030

Level: Grade 9 or higher and taken Video Game Design – Fundamentals of a Video Game Design.

Course Description

Composition of a Video Game

Delivers in-depth instruction, including theory and application, on the details of video game design. Each chapter acts as a building block that supports the next skill learned. This allows students to learn the objective of each lesson, practice the corresponding skill, and lay the foundation on which to acquire the next skill set.

Curriculum Objectives

Students who complete the Video Game Design – Composition of a Video Game Design course will be able to perform the following functions:

- Explain what is meant by the scope, or life cycle, of a video game
- Develop character descriptions
- Develop a comprehensive story outline for a video game
- Design a basic HUD for a video game
- Detail the elements needed to create audience-appropriate engagement
- Evaluate the five key mechanics of a strategy game
- Develop game programming using qualifiers
- Incorporate sounds into a video game
- Apply various artistic techniques to create the perception of depth in artwork
- Compare and contrast raster images and vector images
- Create pose-to-pose animations for game assets
- Summarize the ways in which physics applies to video games
- Describe the components and identify the classifications of a simulation

Career Pathways

Video Game Design – Composition of a Video Game Design curriculum builds the skills you need and is the first step to get hired and succeed in jobs related to video game design. When you go for more study, this course is a great foundation.

Career pathways include: any member of the production team that make up the video game design profession.

Industry certification

NA

Prerequisite: Video Game Design Fundamentals

Linux Essentials (Network Operating Systems)

The Linux curriculum consists of three courses. Each course must be taken in sequence. (NOTE: Use the following 4 course codes to register.)

- NET3050 - Network Operating Systems
- NET Project to help cover course content
- NET Project to help cover course content
- NET Project for Cap Stone Project

Course: Linux Essentials I - approximately 100 hours.

Level: Grade 10 or higher and taken IT Essentials.

Course Description

Knowledge of Linux is a helpful skill for a wide variety of careers in business and Information Technology fields. Many emerging and growing career opportunities including big data, cloud computing, cyber security, information systems, networking, programming and software development (to name a few) require basic to advanced knowledge of the Linux command line.

Curriculum Objectives

This course covers the fundamentals of the Linux operating system and command line. The goal of this course is to provide students a "starting place" for learning the Linux operating system. By the end of the course, students will be able to complete the following objectives:

- Understand Linux as an operating system
- Explain some of the considerations for choosing an operating system
- Understand some of the basics of open source software and licensing
- Acquire basic knowledge of working with Linux
- Learn basic Linux command line skills
- Learn how to use help commands and navigate help systems when using Linux
- Basics of how to work with Linux files and directories
- Searching and extracting data from Linux files Basic understanding of the concept of scripting
- Familiarity with the components of desktop and server computers
- Knowing where data is stored on a Linux system
- Querying vital network settings for a Linux computer on a Local Area Network
- Identifying various types of users on a Linux system
- Creating users and groups on a Linux system
- Managing Linux file permissions and ownership
- Understanding special Linux directories and files

Career Pathways

Knowledge of Linux is an important differentiator for business and IT professionals interested in big data, cloud computing, cybersecurity, information systems, networking, programming, software development, and more.

Career pathways include: network engineer, software developer, and Linux administrator

Industry certification

Not associated with any certification exams.

Prerequisite: Grade 10 or higher & PC Hardware and Software - IT Essentials

Introduction to Linux II **– Approximately 100 hours**

This course has no CTS modules that can be correlated with the Alberta Program of Studies so any student wishing to take this course will be required pay a tuition of $400 Canadian.

NOTE: Cisco also charges a $39.95 USD per student fee to take this course

Level: Grade 10 or higher and taken Introduction to Linux I.

Course Description

The Introduction to Linux II course focuses on the basic Linux skills needed in preparation for the **second**

Linux Professional Institute certification exam. Learners will continue to gain proficiency performing maintenance tasks on the command line, installing and configuring a computer running Linux and configuring basic networking.

Curriculum Objectives

By the end of the course, students will be able to complete the following objectives:

- Shells, Scripting and Data Management
- Interfaces and Desktops
- Administrative Tasks
- Essentials System Services
- Network Fundamentals
- Security

Industry certification

CompTIA Linux+ certification exam or second Linux Professional Institute LPIC-1 certification exam.

C++ Programming - approximately 125 hours.
(NOTE: Use the following 5 course codes to register.)

- CSE1010
- CSE1110
- CSE2010
- CSE2120
- CSE2140

Individual Module Descriptions

Level: Grade 11 or higher.

Course Description

You will learn traditional topic of an introduction-programming course along with simple game development. You start by writing console-based programs and move on to develop simple games and programs that use graphics and animation.

Curriculum Objectives

Students who complete the C++ Programming – C++ Programming course will be able to perform the following functions:

- Introduction to programming
- C++ Fundamentals
- Decision Structures and Boolean Logic
- Repetition Structures
- Functions
- Arrays
- Using Files and Arrays
- Game Code Tutorials

Career pathways include: video game and/or application programmer.

Industry certification

NA

Corerequisite: Java Programming

Individual Module Descriptions

CSE1010: **COMPUTER SCIENCE 1**

Prerequisite: None

Description: Students explore hardware, software and processes. This includes an introduction to the algorithm as a problem-solving tool, to programming languages in general and to the role of programming as a tool for implementing algorithms.

CSE 1110: **STRUCTURED PROGRAMMING 1**

Prerequisite: None

Description: Students are introduced to a general programming environment in which they write simple structured algorithms and programs that input, process and output data, use some of the more basic operators and data types, and follow a sequential flow of control.

CSE 2010: **COMPUTER SCIENCE 2**

Prerequisites: CSE1010: Computer Science 1 CSE1120: Structured Programming 2
Description: Students explore hardware, software and processes at an intermediate level. Students extend their understanding of software development by learning how to layer modular programming approaches over structured programming techniques to improve the efficiency and robustness of algorithms and programs. They also are introduced to derived data types to provide them with data structures suitable for more demanding problems.

Students add to their understanding of the hardware side of computer science by exploring a stylized von Neumann computer system at the machine level, and of the social side of computer science by examining some of the issues that have arisen from the implementation of computer technology.

CSE2120: **DATA STRUCTURES 1**

Prerequisite: CSE2110: Procedural Programming 1

Description: Students learn how to design code and debug programs that use a set of data structures that can be used to handle lists of related data. Building on their knowledge of basic or primitive data types, they learn how to work with fundamental data structures such as the array and the record. As part of this process, they learn what types of problems benefit from the use of these types of data structures.

CSE 2140: **SECOND LANGUAGE PROGRAMMING 1**

Prerequisite: CSE2110: Procedural Programming 1 or CSE1120: Structured Programming 2

Description: Students who have mastered the basics of one programming language are given the opportunity to learn the basics of another. Designed for students who have learned how to write structured and/or modular programs in a more accessible programming environment, this course gives students an opportunity to develop a similar skill set in a more demanding language. In the process, they have a further opportunity to hone their structured and modular programming skills.

Java Programming - approximately 125 hours.

(NOTE: Use the following 5 course codes to register.)

- CSE1120
- CSE2110
- CSE3010
- CSE3120
- CSE3130

Level: Grade 11 or higher and taken C++ Programming 11 and C+ in Math 10.

Course Description

You are about to embark on an exciting journey of learning to program using Java. You will use virtual robots to learn structured, procedural, and object-oriented

programming. Virtual robots offers significant advantages such as: visual feedback from the virtual robots; programs are easier to write when programmers can imagine what they would do if they were the robot; and the robot microworld allows students to begin programming immediately using real objects in a real programming environment.

Curriculum Objectives

Students who complete the Java Programming 12 – Java Programming course will be able to perform the following functions:

- Using Variables
- Developing Methods
- More on Variables and Methods
- Making Decisions
- More Decision Making
- Programming with Objects
- Extending Classes with Services
- Game Code Tutorials

Career pathways include: video game and/or application programmer.

Industry Certification
NA
Corerequisite: C++ Programming

Individual Module Descriptions

CSE 1120: **STRUCTURED PROGRAMMING 2**

Prerequisite: CSE1110: Structured Programming 1

Description: Students work with structured programming constructs by adding the selection and iteration program control flow mechanisms to their programming repertoire. They write structured algorithms and programs that use blocks to introduce an element of modularity into their programming practice.

CSE 2110: **PROCEDURAL PROGRAMMING 1**

Prerequisite: CSE1120: Structured Programming 2

Description: Students develop their understanding of the procedural programming paradigm. They move from a structured programming approach in which modules were handled through the use of program blocks to a

more formal modular programming approach in which they are handled through subprograms. In the process, students also learn to use a number of new design approaches made possible by the new paradigms. As part of this process, they also learn what types of problems are amenable to modular algorithms and programs.

CSE 3010: **COMPUTER SCIENCE 3**

Prerequisites: CSE2010: Computer Science 2

CSE2110: Procedural Programming 1

Description: Students explore hardware, software and associated processes at an advanced level. They extend their understanding of software development by moving from procedural programming approaches to an object-oriented approach. In the process, they learn how object-oriented programming (OOP) can improve the efficiency and robustness of algorithm development and program construction. They deepen their understanding of the hardware side of computer science by exploring the connection between the binary/hexadecimal number systems and some of the simple logic gates that re the basis of the von Neumann computer. They also add to their understanding of the social implications of computer science by examining the emerging information society.

CSE 3120: **OBJECT-ORIENTED PROGRAMMING 1**

Prerequisite: CSE2110: Procedural Programming 1

Description: Students add to their understanding of programming paradigms by moving from a procedural programming approach, in which modularity is handled through subprograms, to an object-oriented approach, in which it is handled through objects. They learn a simple object-oriented analysis and design approach based on the use of object diagrams and write programs that use objects associated with one another in a client/server relationship.

CSE 3130: **OBJECT-ORIENTED PROGRAMMING 2**

Prerequisite: CSE3120: Object-oriented Programming 1

Description: Students extend their knowledge of object-oriented programming (OOP). They add to their expertise in object-oriented design by using some of the techniques associated with the UML design approach and to their programming expertise by writing programs that explore association between classes. Students work with abstract classes, developing algorithms that employ the object diagram approach and programs that use template classes, containment and inheritance to promote reusability.