

## Semester 1

### **CMPH 211: Computer Hardware and Operating System Essentials**

**Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)**

**Description:**

Computer Hardware and Operating System Essentials will provide learners with a strong foundation in both the hardware and software essentials of computer systems. Learners will perform the installation and configuration of a variety of popular operating systems. They will use troubleshooting techniques to diagnose hardware and software problems, configure add-ons, and replace defective sub-systems. Software installs and testing will include applications and backup and security processes, including anti-malware protection. Learners will be able to configure and/or install a variety of memory, I/O, and peripherals.

### **CMPP 269: Computer Programming Essentials**

**Credits: 3, Hours: 90 (30 Hours Lecture, 60 Hours Lab)**

**Description:**

Computer Programming Essentials will introduce the concept of computer programming languages as tools which provide IT business solutions. Topics will include problem solving techniques, overview of software design methodology, programming language terminology and an introduction to the differences between varying styles of languages. The course will include an introduction to basic programming structures. Learners will create applications using an industry standard programming language.

### **CMPS 237: Information Technology Foundations**

**Credits: 3, Hours: 75 (75 Hours Lecture)**

**Description:**

IT Foundations will provide students an opportunity to explore the four Information Technology (IT) majors (Computer Systems, Network Systems, Software Development, and Telecom Systems) to help develop a career path plan. Academic courses, job profiles, professional skills, and industry opportunities will be explored. Students will also develop IT literacy in file management, productivity applications, and basic web design.

**COMM 256: Professional Communications and Presentation Skills****Credits: 3, Hours: 90 (90 Hours Lecture)****Description:**

Professional Communications and Presentation Skills will introduce learners to the technical documents, reports and presentations produced in relevant industry settings. Learners will gain an understanding of the strategies and skills required for effective communication in a professional environment. Course work will require learners to work in individual and collaborative settings.

**CPNT 220: Introduction to Networking****Credits: 3, Hours: 105 (60 Hours Lecture, 45 Hours Lab)****Description:**

Introduction to Networking will introduce network terminology, devices, standards, protocols and their relation to the Open System Interconnection (OSI) model. Learners will gain a practical understanding of hubs, bridges, switches, routers and basic cabling, Internet Protocol (IP) addressing and network standards.

**Semester 2****CMPH 252: Systems Hardware I****Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)****Description:**

In this hands-on course, the learner will cover essential technology, and techniques in computer hardware, in order to prepare for the CompTIA A+ Essentials Exam. The course will also expand on the CompTIA A+ Essentials by benefiting the learner with hands-on experience in the SAIT Lab Environment, and additional materials presented in the classroom.

**CMPS 254: Computer Operating Systems****Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)****Description:**

This course introduces the learner to the internals of operating systems. Topics include: operating system kernel, user interface, memory structures, file systems, process management, APIs, system security and troubleshooting. The learner will understand how different components fit together (i.e. hardware, software, operating system and network) using C and Java programming language and Windows and Linux operating systems to demonstrate concepts.

**CMPS 275: Client-Server Administration****Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)****Description:**

Client-Server Administration introduces the learner to basic administration for the Microsoft family of operating systems and Linux based operating systems. The course will provide the learner with a foundation in essential network administration.

**CPRG 260: Scripting for System Administrators****Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)****Description:**

Scripting for System Administrators introduces the learner to scripting using the Perl scripting language, Powershell. Topics covered include script development, basic scripting structures, controls, files, directories, and processes. Systems administration scripts will be implemented primarily on the Linux platform. After examining Linux commands, projects will be carried out in Perl.

**HREL 250: Business Dynamics****Credits: 3, Hours: 45 (45 Hours Lecture)****Description:**

This course is designed to provide students with an overview of the important concepts and terms to develop a general understanding of how technology 'works' in the world of business. Topics will include organizational structure and processes, developing business cases, customer service, and business ethics and politics. These topics will be presented through class discussion and problem based learning using industry related case studies.

**Semester 3****CMPH 308: Data Center Systems and Storage****Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)****Description:**

In Data Center Systems and Storage, students will learn about the systems and procedures typically found in IT data centers. Data center physical environments will be examined, including servers, storage, power and cooling, power protection, data backups, and disaster recovery. Systems skills will include configuration of SCSI Direct Attached Storage and RAID, Fibre Channel and iSCSI. Students will also become familiar with commercial Storage Area Network systems.

**CMPS 305: Server Service Administration****Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)****Description:**

Server Service Administration will provide the learner with skills in installing, configuring and troubleshooting services for the Windows and Linux operating systems. Services covered will include Web services, Mail services, and File Transfer services. The learner will also manage interoperability between Linux and Windows systems.

**CPRG 302: Web Essentials****Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)****Description:**

Web Essentials will introduce learners to web technology and the skills required to build a complete web application. The course will focus on the installation, configuration, and use of web and database servers in Linux and Windows operating system environments, as a platform for developing web applications. Learners will develop skills by building client-side and server-side components through hands-on labs and project work.

**ITSC 311: IT Security I****Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)****Description:**

IT Security I provides an introduction to the field of IT Security. This is the first of two courses on IT Security and will begin with an overview of this industry. Learners will then focus on four specific areas: network security, operating systems security, physical security and web/e-commerce security. Topics include: disaster recovery, penetration detection, malware detection, virtual private networks, authentication services, virtual environments and video surveillance.

**PROJ 304: Project Preparation****Credits: 3, Hours: 45 (30 Hours Lecture/15 Hours Lab)****Description:**

The successful completion of a project requires that the team work closely with project stakeholders, plan the project carefully, execute according to plan, and solve problems efficiently. This introductory course focuses on fundamental principles of project management. Students will examine basic project management practices for initiating and defining the scope of a project, planning the project, executing the project with an effective project team, and successfully completing the project to the client's satisfaction. Completion of this course prepares students for successful entry into PROJ 354, Capstone Project.

## Semester 4

### **CMPS 368: Data Center Management and Virtualization**

**Credits: 3, Hours: 90 (45 Hours Lecture, 45 Hours Lab)**

**Description:**

Data Center Management and Virtualization focuses on server virtualization technologies. In this course, students will examine high availability, clustering, fault tolerance and recovery technologies. Systems covered will include several well known hypervisors: VMware vSphere, Xen, Microsoft Hyper-V and Linux KVM. Virtual Desktop Infrastructure, Cloud Computing and basic Network Management techniques will also be examined.

### **INTP 354: Service Management**

**Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)**

**Description:**

Service Management will explore the basic concepts, structures, and processes organizations execute to successfully manage business and IT. This course will review global best practices including ITIL® and look at how implementation of service management can contribute to quality customer service and support. ITIL® is a Registered Trade Mark of the Office of Government Commerce in the United Kingdom and other countries.

### **INTP 362: Emerging Trends in Technology**

**Credits: 3, Hours: 45 (45 Hours Lecture)**

**Description:**

Emerging Trends in Technology will focus on new technologies being developed and how they will or have affected industry. Learners will research and investigate potential technology trends identified by industry each year. Topics include identification of emerging trends, their impact on different organizations, and the creation of business proposals, and utilization of peer feedback.

### **ITSC 321: IT Security II**

**Credits: 3, Hours: 90 (45 Hours Lecture/45 Hours Lab)**

**Description:**

This is a second course in computer and network security. Following up on the fundamentals outlined in ITSC 311 this course examines critical issues in computer forensics, rootkit deployment, encryption technology, and malware propagation patterns.

**PROJ 354: Capstone Project**

**Credits: 3, Hours: 90 (90 Hours Lab)**

**Description:**

The capstone course provides students with the opportunity to explore a problem or issue of personal or professional interest and address the problem or issue through applied research. Students should have a command of skills and knowledge in systems, functionality, and technology. The capstone requires students to demonstrate an integration of technical skill and knowledge, professional competencies and development/execution strategies.