Course Prefix/Number: **IST 203**
Course Title: **Cisco Switch Configuration**
Lecture Hours/Week: **3.0**
Lab Hours/Week: **0.0**
Credit Hours/Semester: **3.0**

Distance Learning Attendance/VA Statement
Textbook Information

COURSE DESCRIPTIONS
This course is a study of current and emerging computer networking technology. Topics covered include safety, networking, network terminology and protocols, network standards, LANs, WANs, OSI models, cabling, cabling tools, Cisco routers, router programming, star topology, IP addressing, and network standards.

COURSE COMPETENCIES
Upon successful completion of this course, the student should be competent to complete the following tasks:

Module 1 – LAN Design
- Describe how a hierarchical network supports the voice, video, and data needs of a small- or medium-sized business.
- Describe the functions of each of the three levels of the hierarchical network design model, the principles of hierarchical network design (aggregate connectivity, network diameter, and redundancy), and the concept of a converged network.
- Provide examples of how voice and video over IP affect network design.
- Select appropriate devices to operate at each level of the hierarchy, including voice and video components.
- Match the appropriate Cisco switch to each layer in the hierarchical network design model.

Module 2 – Basic Switch Concepts and Configuration
- Summarize the operation of Ethernet as defined for 100/1000 Mbps LANs in the IEEE 802.3 standard.
- Explain the functions that enable a switch to forward Ethernet frames in a LAN.
- Configure a switch for operation in a network designed to support voice, video, and data transmissions.
- Configure basic security on a switch that will operate in a network designed to support voice, video, and data transmissions.

Module 3 – VLANs
- Explain the role of VLANs in a network.
- Explain the role of trunking VLANs in a network.
- Configure VLANs on the switches in a network topology.
- Troubleshoot the common software or hardware configuration problems associated with VLANs on switches in a network topology.

Module 4 – VTP
- Explain the role of VTP in a converged switched network.

- Describe the operation of VTP including domains, modes, advertisements, and pruning.
- Configure VTP on the switches in a converged network.

Module 5 – STP
- Explain the role of redundancy in a converged network.
- Summarize how STP works to eliminate Layer 2 loops in a converged network.
- Explain how the STP algorithm uses three steps to converge on a loop-free topology.
- Implement rapid PVST+ in a LAN to prevent loops between redundant switches.

Module 6 – Inter-VLAN Routing
- Explain how network traffic is routed between VLANs in a converged network.
- Configure inter-VLAN routing on a router to enable communication between end-user devices on separate VLANs.
- Troubleshoot common inter-VLAN connectivity issues.

Module 7 – Basic Wireless Concepts and Configuration
- Describe the components and basic operation of wireless LANs.
- Describe the components and operations of basic WLAN security.
- Configure and verify basic wireless LAN access.
- Troubleshoot wireless client access.

MINIMAL STANDARDS
Minimal standards of performance on all course competencies for receiving credit for the course and indicated by 60% overall accuracy on evaluation instruments that address the course competencies listed above. Required standards of performance on all course competencies for enrollment in subsequent higher-level computer technology courses are indicated by 70% overall accuracy on evaluation instruments that address the course competencies listed above.

COURSE REQUIREMENTS
Students are responsible for attending all schedule class meetings until they have completed all course requirements. Students are responsible for all material covered and for all assignments made in all classes. Any student caught cheating or involved in other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action.

ATTENDANCE POLICY
The attendance policy as stated in the York Technical College Handbook will be enforced. Makeup tests will not be given for theory tests. If a student must miss a theory test, he/she will get a zero for that test. However, students have the option of taking the comprehensive final. The student's grade on the comprehensive final will replace his/her lowest theory test grade. It is the student's responsibility to schedule a time for a make-up hands-on test with his/her instructor.

DISABILITIES STATEMENT
Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Office (SRO) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.

EVALUATION STRATEGIES/GRADING
Students must pass the skills-based test that will be given at the end of the semester. They must also score 70% on the final exam in order to earn credit for the course. If these two criteria are met, the course grade will be comprised of the following:

Module 1 (12% total) Test – 6% of final average Lab(s) – 6% of final average	**Module 2** (12% total) Test – 6% of final average Lab(s) – 6% of final average	Grading Scale	
		90-100	A
		89-89	B
Module 3 (12% total) Test – 6% of final average Lab(s) – 6% of final average	**Module 4** (12% total) Test – 6% of final average Lab(s) – 6% of final average	70-79	C
		60-69	D
Module 5 (12% total) Test – 6% of final average Lab(s) – 6% of final average	**Module 6** (12% total) Test – 6% of final average Lab(s) – 6% of final average	Below 60	F
Module 7 (12% total) Test – 6% of final average Lab(s) – 6% of final average	**Final Exam** (16% total)		

ENTRY LEVEL SKILLS
The student must possess basic computer skills in a Windows operating system environment.

PREREQUISITES
IST202 with a minimum grade of “C”

CO-REQUISITES
None