



**TRINITY VALLEY COMMUNITY COLLEGE
ADMINISTRATIVE-MASTER SYLLABUS**

The Administrative- Master Syllabus is an administrative tool; it is **not intended to be distributed to students**. It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of TVCC, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction. The Administrative-Master Syllabus will demonstrate that there is consistency and comparability in course offerings.

Course Title

Fundamentals of Networking Technology

Course Prefix and Number

ITNW 1325

Department – Division

Computer Science

Course Type – select from one of the following categories.

- **Academic General Education Course** (from ACGM – but not in TVCC Core)
- **Academic TVCC Core Course**
- **WECM Courses**

Semester Credit Hours: Lecture Hours: Lab/other hours

Semester Credit Hours	Lecture Hours	Lab/Other* Hours
3	3	3

Other hours include practicum, clinical or other types of non-lecture instruction. *If other, please specify: _____

Course Catalog Description

Instruction in networking technologies and their implementations. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. Identify and use network transmission media; explain the OSI model; recognize the primary network topologies/protocols, identify their characteristics, and determine which would be most appropriate for a proposed network; identify the functions of a network operating system and distinguish between centralized, client/server, and peer-to-peer systems; and distinguish between Local Area Networks (LANs) and Wide Area Networks (WANs) and identify the components used to expand a LAN into a WAN.

Prerequisites/co requisites

None

Topical Outline

This course is designed to present a detailed knowledge of networking concepts. The material covered includes network design and media, network interface cards, managing networks, network communication and protocols, network architecture, simple and complex network operations, network administration, distributed networks, troubleshooting, and Internet resources. Each topic covered is accompanied by review questions, case projects, and labs to measure your progress

Course Learning Outcomes

The student will acquire an understanding of the following course learning outcomes:

- Describe the fundamental reasons for networking
- Identify essential network components
- Compare different types of networks
- Understand the role of a server and describe types of servers
- Apply your knowledge when selecting a network type
- Explain the basics of a network layout
- Describe the standard networking topologies
- Explain the variations on standard networking topologies
- Describe the role of hubs and switches in a network topology
- Construct a basic network layout
- Identify general cabling characteristics applied to physical media
- Describe the primary cable types used in networking
- Identify the components in a structured cabling installation
- Describe wireless transmission techniques used in LANs and WANs
- Describe a network interface card's function and configurable options
- List important factors for selecting network adapters

- Describe types of special-purpose network interface cards
- Explain the role of driver software in network adapters
- Explain the OSI reference model layers and their relationship to hardware and software
- Describe the function and creation of a data frame
- Explain the IEEE 802 networking model and related standards
- Explain the function of protocols in a network
- Describe common protocol suites
- Compare and contrast media access methods used in network architectures
- Describe the operation of Ethernet
- Differentiate between Ethernet standards and speeds
- Explain the four Ethernet frame types and how they are used
- Describe the token ring architecture and its components
- Describe the AppleTalk network architecture
- Explain the function of Fiber Distributed Data Interface
- Describe other LAN and WAN architectures and their role in today's networks
- Explain the operation fundamentals of network operating systems
- Describe networking software components
- Describe the basic steps of network operating system installation
- Configure network services
- Explain network application installation and configuration concepts
- Explain how to implement a multivendor network environment
- Discuss the differences between centralized and client/server computing
- Define the client/server networking environment
- Discuss the basics of Web-based computing environments
- Develop a network security policy
- Secure physical access to network equipment
- Secure network data
- Use tools to find network security weaknesses
- Address the needs of a small business network
- Identify small business network equipment requirements
- Identify small business application requirements
- Describe the issues of supporting a small business
- Manage networked accounts
- Monitor network performance
- Protect your servers from data loss
- Explain how large networks can be implemented with a variety of devices
- Discuss the technologies used in constructing WANs
- Explain some terminology used in implementing WANs
- Configure and describe remote access protocols
- Describe the benefits of network management and planning
- Explain different approaches to network troubleshooting
- List the steps of the problem-solving process
- Describe some measures to take in common troubleshooting situations

Relationship to General Education Outcomes – In addition to the core competencies, Trinity Valley Community College has established ten general education goals which specify knowledge and skills that students should gain from completing courses in the various component areas of the core curriculum. Information regarding curriculum and assessment as a means for the improvement of student learning through the general education component. (Select all that apply.)

Mark with an "X"	General Education Outcome
	A. To communicate clearly and effectively in both oral and written English.
	B. To improve reading skills focused on comprehending, analyzing, interpreting, and evaluating printed materials.
	C. To understand mathematical information and utilize mathematical skills.
X	D. To demonstrate qualitative and quantitative critical thinking skills.
	E. To understand and appreciate cultural and ethnic diversity.
X	F. To utilize computer based technology in accessing information, solving problems, and communicating.
	G. To recognize and evaluate artistic achievements in the visual and performing arts.
	H. To improve basic understanding of political, economic, and social systems.
	I. To demonstrate knowledge of the physical universe and living systems.
	J. To develop skills and strategies to become an engaged learner.

Required Text(s)

The current edition of the textbook from the bookstore.

Optional Text(s)

None

Material/Technology to be supplied by the student.

If the student is taking this course as an Internet course, then the student is responsible for having access to the Internet.

The student will need a storage media to save laboratory assignments and practice exams on.

Course Requirements/Grading System – describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course; not intended to restrict the individual nature by which each faculty member who teaches the course determines course requirements and final student performance, but should offer consistency within reason for all sections taught for those departments without a standardized format.

GRADING SYSTEM:

The student's grade will be determined by performance on quizzes, unit tests, laboratory assignments and a final. The class instructor prepares the individual grade criteria with respect to the departmental syllabus.

Approvals – the contents of this document have been reviewed and are found to be accurate.

Prepared by	Signature	Date
Department Head	Signature	Date
Division Chair	Signature	Date
Vice President	Signature	Date