

I. COURSE DESCRIPTION:

Students will develop knowledge of local and wide area network types, related standards, current network implementations and future trends. In addition to LAN Network Operating Systems such as Windows NT, WAN protocols and connectivity methods are also studied. Developing practical skills in installing and managing Windows NT Server-based LANs is an important objective of this course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Compare various local area network types, media, hardware components and associated standards and applications, enabling appropriate selection from among alternative technologies.

Potential Elements of the Performance:

- Compare common LAN topologies.
- Specify LAN components required for different types of LANs.
- Compare Ethernet (IEEE 802.3), Token Ring (IEEE 802.5) and other LAN implementations to enable appropriate selection.
- Improve the performance of a LAN.
- Compare networking protocols and routing methods.
- Describe, terminate and test various LAN cables.

This learning outcome will constitute approximately 25% of the course. Reference: “**Windows NT Server 4.0**” by Joseph Williams Chap. 4

2. Perform installation, management and troubleshooting tasks on a Windows NT Server network.

Potential Elements of the Performance:

- Identify and describe the requirements, main features and terminology of the Windows NT Server Operating system, and compare it with other operating systems.
- Distinguish between domains and workgroups and appropriately specify their use in various situations.
- Plan and manage NT Server users and groups.
- Install Windows NT Server in a variety of configurations.

- Install and manage NT client software.
- Manage and monitor NT Server.
- View, backup and edit the Registry.
- Manage NT disk and file systems, create shares and set permissions.
- Manage NT print services.
- Prepare a contingency plan and recover from server failure, using backups and other methods.
- Implement appropriate security measures to protect LAN resources.

This learning outcome will constitute approximately 50% of the course.

References: “Windows NT Server 4.0” by Joseph Williams

3. Compare internetworking techniques and devices used in enterprise or backbone networks so that effective selection and upgrade planning may occur.

Potential Elements of the Performance:

- Identify and specify internetworking devices used in backbone or enterprise networks including hubs, bridges, switches, routers, and gateways.
- Compare alternatives for high speed interconnection and upgrade options in backbone networks.

This learning outcome will constitute approximately 15% of the course.

Reference: Chap 38-44 - Blanchard Notes

4. Compare various metropolitan and wide area networks, associated standards and services, enabling appropriate selection from among available alternatives.

Potential Elements of the Performance:

- Compare WAN and MAN telecommunications services: Dialed-circuit services, Dedicated Circuit services, Switched Circuit services, and Packet Switched Networks.
- Select and improve MAN/WAN services for utilization within an organization.

This learning outcome will constitute approximately 10% of the course.

Reference: Chap 48,62,63, Blanchard Notes

III. TOPICS:

1. Introduction to Local Area Network topologies, types and protocols.
2. Backbone Networks.
3. Windows NT Server 4.0 installation, management and configuration.
4. Wide Area Network telecommunications services.
5. Network Security.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**DISKETTES:**

- 1 Box of 10 diskettes for drivers & utilities

TEXT BOOK:

- “Windows NT Server 4.0” by Joseph Williams

Online Reference:

Data Communications notes by Eugene Blanchard

V. EVALUATION PROCESS/GRADING SYSTEM:

| | |
|-----------------------------|-----|
| 3 WRITTEN TESTS | 60% |
| QUIZZES and LAB ASSIGNMENTS | 40% |

(The percentages shown above may vary slightly if circumstances warrant.)

NOTE: *It is necessary to pass both the theory and the lab part of this course. It is not possible to pass the course if a student has a failing average in the three written tests but is passing the lab portion, (or vice versa).*

The following semester grades will be assigned to students in postsecondary courses:

| <u>Grade</u> | <u>Definition</u> | <u>Grade Point Equivalent</u> |
|--------------|---|-------------------------------|
| A+ | 90 - 100% | 4.00 |
| A | 80 - 89% | 3.75 |
| B | 70 - 79% | 3.00 |
| C | 60 - 69% | 2.00 |
| R (Repeat) | 59% or below | 0.00 |
| CR (Credit) | Credit for diploma requirements has been awarded. | |
| S | Satisfactory achievement in field | |

| | |
|----|---|
| U | placement or non-graded subject areas. Unsatisfactory achievement in field placement or non-graded subject areas. |
| X | A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies & Procedures Manual – Deferred Grades and Make-up</i>). |
| NR | Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades. |

UPGRADING OF INCOMPLETES

When a student's course work is incomplete or final grade is below 60%, there is the possibility of upgrading to a pass when a student meets all of the following criteria:

1. The student's attendance has been satisfactory.
2. An overall average of at least 50% has been achieved.
3. The student has not had a failing grade in all of the theory tests taken.
4. The student has made reasonable efforts to participate in class and complete assignments.

The nature of the upgrading requirements will be determined by the instructor and may involve one or more of the following: completion of existing labs and assignments, completion of additional assignments, re-testing on individual parts of the course or a comprehensive test on the entire course.

LABS:

Lab activities represent a very important component of this course. Because of this, **attendance is mandatory** and the satisfactory completion of all lab activities is required. *It is the student's responsibility to discuss absences from regularly scheduled labs with the instructor so that alternate arrangements (where possible) can be made to complete the lab requirements.*

Required lab report requirements will be detailed before labs are assigned. In some instances, a quiz will be used as the evaluation method for a lab activity. A late penalty will be applied for labs handed in past the due date.

ATTENDANCE:

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the

instructor. Where class test results warrant, the following policy will be announced and followed: *Attendance will be taken and only one missed class will be permitted for a student before eligibility for any rewrite activity is revoked.*

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.