# ITT Technical Institute

# NT2799T

# Network Systems Administration

# Capstone Project

# Onsite Course

# SYLLABUS

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**Credit hours:** 4.5

**Contact/Instructional hours:** 72 (36 Theory Hours, 36 Lab Hours)

**Prerequisite(s) and/or Corequisite(s):**

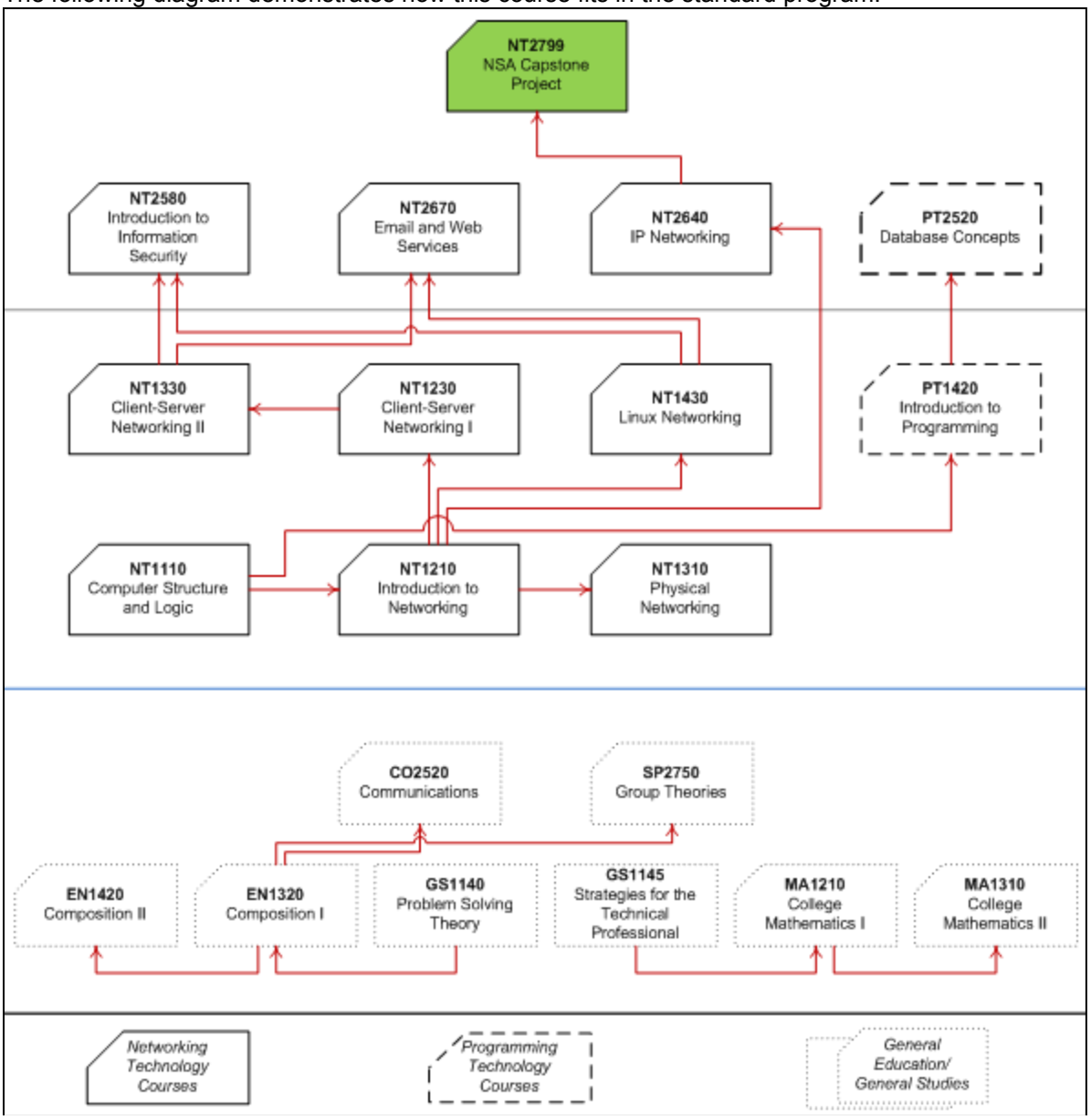
Prerequisites: Must be taken during the student's final quarter of study, and requires prior satisfactory completion of NT2640T IP Networking or equivalent

**Course Description:**

This course provides an opportunity for students to work on a comprehensive project that includes the design, planning and implementation of a network solution for solving specific business problems. Common project management processes are applied to identify deliverables and outcomes of the project.

# Where Does This Course Belong?

The following diagram demonstrates how this course fits in the standard program:




**NOTE:** Refer to the catalog for the state-specific course and program information, if applicable.

This course is required to achieve the Associate of Applied Science Degree in the Network Systems Administration program. This program covers the following core areas:

- Computer and networking foundations
- Server and client networking
- LAN/WAN internetworking and basic telecommunication and data communication
- Network applications and security
- Computer programming and database
- Routing and switching
- Computer hardware and software

# Course Summary

## Major Instructional Areas

1. Project Management Techniques
2. A Fundamental Review of the Basics of Computers in the AASNSA Program
3. Capstone Project
4. Research of Current and Emerging Technologies

## Detailed Topical Outline

1. Project Management Process
    1.1. Initiating
        1.1.1. Identify case study
        1.1.2. Develop project charter
        1.1.3. Identify stakeholders
        1.1.4. Identify and define case scenario
    1.2. Planning
        1.2.1. Develop project management plan
        1.2.2. Determine requirements, milestones, and deliverables
        1.2.3. Determine scope
        1.2.4. Create WBS, WBS dictionary, and schedule
        1.2.5. Determine quality metrics
        1.2.6. Determine and assign resources
        1.2.7. Determine project cost
        1.2.8. Risk analysis
        1.2.9. Security and maintenance plan
        1.2.10. Disaster recovery plan
    1.3. Executing
        1.3.1. Implementing a network design
        1.3.2. Managing communications
        1.3.3. Managing change requests
    1.4. Monitor and control
        1.4.1. Scope control
        1.4.2. Schedule control
        1.4.3. Cost control
        1.4.4. Performance reporting
        1.4.5. Progress updates
    1.5. Closing
        1.5.1. Formal project acceptance
        1.5.2. Lessons learned
2. Microsoft Project
3. Overview of Microsoft Project
    3.1. Task table
    3.2. Timeline in Gantt chart view
    3.3. Printing a standard report
    3.4. Help function
    3.5. Closing a project
    3.6. Project settings
        3.6.1. New project
            3.6.1.1. Start date
            3.6.1.2. Calendar
        3.6.2. Project options

        3.6.3. Calendar working time
            3.6.3.1. Printing working days
        3.6.4. Using templates
4. Tasks and Project Schedule
    4.1. Entering tasks
        4.1.1. Specify a schedule
    4.2. Organizing tasks
        4.2.1. Milestones
        4.2.2. Recurring tasks
        4.2.3. Linking tasks
    4.3. Outline features
    4.4. Work breakdown structure codes
    4.5. Applying a calendar
    4.6. Setting constraints
5. Scheduling Resources
    5.1. Viewing resources
    5.2. Entering resource information
        5.2.1. Fixed costs
        5.2.2. Assigning resources to tasks
        5.2.3. Viewing and modifying resource assignments
    5.3. Printing allocations and costs
6. Modifying Task Information
    6.1. Edition task information
    6.2. Baselines
    6.3. Percent complete
    6.4. Actuals
    6.5. Lead and lag time
    6.6. Resolving conflicts
    6.7. Setting task deadline
7. The Gantt Chart
    7.1. Adding progress lines
    7.2. Removing task dependencies
    7.3. Rescheduling work
    7.4. Modifying a split
    7.5. Tracking Gantt view
    7.6. Check project progress

## Course Objectives

1. Apply important concepts of project management to the actual Capstone Project proposed for this course.
2. Use Microsoft Office Project to help plan and manage the actual Capstone Project.
3. Analyze the requirements for the Capstone Project.
4. Integrate and apply the knowledge acquired in the program to provide effective technological solutions for given problems.
5. Work in teams on a large-scope project.
6. Document solutions to a problem in detail by applying critical thinking and problem-solving skills.
7. Present and defend a proposal or implementation in spoken, written, and panel formats in a professional manner.
8. Complete a comprehensive skills assessment for the program of study.

# Learning Materials and References

## Required Resources

| Complete Textbook Package | New to This Course | Carried over from Previous Course(s) |
|---|---|---|
| Wood, D. P., & Pascarella, M. E. (2012). *Essentials of Microsoft Project 2007* (custom ed.). Upper Saddle River, NJ: Pearson Custom Publishing. Student Data Files. | ■ | |
| Project Management Institute. (2008). *A guide to the project management body of knowledge (PMBOK Guide)* (4th ed.). Newtown Square, PA: Project Management Institute, Inc. Located in Books 24x7 in the ITT Tech Virtual Library. | ■ | |
| All (or selected) textbooks issued in previous quarters. | | ■ |
| **Other Items** | **New to This Course** | **Carried over from Previous Course(s)** |
| Microsoft Windows 7 Professional | | ■ |
| Microsoft Windows 2008 Server with Active Directory | | ■ |
| Fedora Linux | | ■ |
| Microsoft Visio 2007 | | ■ |

## Technology Requirements

- Optional software:
  - Apache Server
  - Fedora Linux or IIS 5.1 or 6.0
  - Microsoft Exchange Server 2007
  - Microsoft Office Outlook
  - SQL Client
  - SQL Server
- Other course-specific setup:
  - An FTP server
  - Capability for Microsoft Office Project collaboration
  - Optional: Blogs or individual team websites

## Recommended Resources

ITT Tech Virtual Library (accessed via Student Portal | https://studentportal.itt-tech.edu)

- Books> 24x7
  - Heldman, K. (2004). PMP: *Project management professional study guide* (2nd ed.). Alameda, CA: Sybex, Inc.
  - Lewis, J. P. (2007). *Fundamentals of project management* (3rd ed.). New York, NY: AMACOM Books.

- Westland, J. (2006). *The project management life cycle: A complete step-by-step methodology for initiating, planning, executing and closing a project successfully*. Philadelphia, PA: Kogan Page Ltd.


- Books> Ebrary

  - Heldman, K. (2011). *Project management jumpstart* (3rd ed.). Alameda, CA: Sybex, Inc.
  - Richman, L. L. (2002). *Project management step-by-step*. New York: AMACOM Books.

- Reference Resources> Project Management
  - Microsoft Project
    A tour, list of features, and FAQs about Microsoft Project
  - Project Management Institute
    A not-for-profit project management professional association

Other References

The following resources may be found **outside** of the ITT Tech Virtual Library.

- Websites (all websites accessed 05/15/12)
  - Capterra: Project Management Software Programs
    http://www.capterra.com/landing/psaxproj
    A website providing a list of available project management tools with links
  - CIO
    http://www.cio.com
    An IT magazine written for CIOs and other technology leaders
  - Niwot Ridge Resources
    http://www.niwotridge.com/
    A source of information for mission-critical software systems, management processes, and strategies; site maintained by an IT consultant providing links to many resources
  - Oracle: Oracle and Primavera
    http://www.oracle.com/us/corporate/acquisitions/primavera/index.html
    Detailed information about Primavera Project Management software
  - PMOUSA.com
    http://www.pmousa.com
    A website offering free information to project professionals
  - Program Management Forum
    http://www.programmanagementforum.org/default.aspx
    An online source for global news and information related to project management
  - Project Management.com
    http://www.projectmanagement.com/
    A collection of links to project management resources, tools, and news
  - RMC Project Management Incorporated

http://www.rmcproject.com/

A resource for PMP certification training

  - StartWright Resources
    http://startwright.net/
    A list of project management links
  - TechRepublic
    http://www.techrepublic.com/
    A source for discussion and information about IT careers, technology topics, and IT products
  - TenStep
    http://www.tenstep.com/
    A site describing a methodology for managing work as a project
  - TenStep: The Value of Project Lifecycle Methodology
    http://www.lifecyclestep.com/open/401.0Value.htm
    An article about developing a lifecycle methodology
  - Toolbox.com: Project and Portfolio Management
    http://projectmanagement.ittoolbox.com/

An online IT community in which peers share knowledge about a range of IT issues and technologies

- Wideman Comparative Glossary of Project Management Terms
  http://www.maxwideman.com/pmglossary/
  Definitions for commonly used terms in project management

**NOTE:** All links are subject to change without prior notice.

## Information Search

Use the following keywords to search for additional online resources that may be used for supporting your work on the course assignments:

- Bill of materials
- Change management
- Change requests
- Critical path schedule
- Deliverables
- Disaster recovery
- Gantt chart
- Implementation plan
- Kickoff meeting
- Microsoft Office Project
- Milestone
- Network systems administration
- Project acceptance
- Project charter
- Project management
- *Project Management Body of Knowledge* (PMBOK), 4th edition
- Project manager
- Project schedule network diagram
- Project staffing
- Quality metrics
- Resource leveling
- Risk plan
- Risk register
- Schedule baseline
- Schedule compression or crashing
- Scope
- Sponsor
- Stakeholder
- Statement of work
- SWOT analysis
- Variance analysis
- Work breakdown structure
- Work breakdown structure dictionary

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## Suggested Learning Approach

In this course, you will be studying individually and within a group of your peers. As you work on the course deliverables, you are encouraged to share ideas with your peers and instructor, work collaboratively on projects and team assignments, raise critical questions, and provide constructive feedback.

Use the following advice to receive maximum learning benefits from your participation in this course:

| DO | DON'T |
| --- | --- |
| ▪ Do take a proactive learning approach.<br>▪ Do share your thoughts on critical issues and potential problem solutions.<br>▪ Do plan your course work in advance.<br>▪ Do explore a variety of learning resources in addition to the textbook.<br>▪ Do offer relevant examples from your experience.<br>▪ Do make an effort to understand different points of view.<br>▪ Do connect concepts explored in this course to real-life professional situations and your own experiences. | ▪ Don't assume there is only one correct answer to a question.<br>▪ Don't be afraid to share your perspective on the issues analyzed in the course.<br>▪ Don't be negative about the points of view that are different from yours.<br>▪ Don't underestimate the impact of collaboration on your learning.<br>▪ Don't limit your course experience to reading the textbook.<br>▪ Don't postpone your work on the course deliverables – work on small assignment components every day. |

## Course Outline

***Unit 1: INITIATING THE CAPSTONE PROJECT***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Define a project and the concept of project success.
- Describe the phases of a project life cycle, and define the goals of project management.
- Examine and identify existing processes, and determine key elements for initiating a project.
- Determine the core business problem and the business process, and identify user needs.
- Develop a project management plan, design a project charter, and identify the scope of a project.
- Identify the key principles that lead to better project team performance.
- Determine team members, a company name, and a company logo for a project.
- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Identify the best techniques for communication plans, meetings, managing project deliverables, and status reporting.

| READING ASSIGNMENT | GRADED ACTIVITIES/DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • Wood, Chapter 1<br>• PMBOK Sections<br>  ○ 1.2: What is a Project?<br>  ○ 1.3: What is Project Management?<br>  ○ 1.6: Role of a Project Manager<br>  ○ 2.1: The Project Life Cycle—Overview<br>  ○ 2.3: Stakeholders<br>  ○ 3.3.1: Develop Project Charter<br>  ○ Appendix A, Table A2: Elements of the Charter and Scope Statement (p. 351)<br>  ○ Chapter 5: Project Scope Management (Overview) | Assignment | Project Schedule Activity Diagram (assigned) | 0% |
| | | Project Charter (assigned) | 0% |
| | Project | Active Directory (assigned) | 0% |
| | | Network Schematic (assigned | 0% |
| | | Server Configuration (assigned) | 0% |
| | | Network Infrastructure Configuration (assigned) | 0% |

***Unit 2: PLANNING THE PROJECT: PART I***

***Out-of-class work:***

Upon completion of this unit, students are expected to:

- Develop a project management plan, design a project charter, and identify the scope of a project.
- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Create the Work Breakdown Structure (WBS) to detail the steps of a project, and create a WBS dictionary to determine resources, time, materials, etc.
- Define the tasks and subtasks and identify and describe new system boundaries and processes.
- Identify essential components for successfully managing stakeholders' expectations.
- Design a project schedule using the project schedule network diagram milestones in Microsoft Project, and develop Gantt charts.

10 hours

| READING ASSIGNMENT | GRADED ACTIVITIES/DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • Wood, Chapters 2-3<br>• PMBOK Sections<br>  ○ 5.3: Create WBS<br>  ○ 6.5.3: Develop Schedule: Outputs | Assignment | WBS and WBS Dictionary (assigned) | 0% |
| | | Preliminary Schedule (assigned) | 0% |
| | | Project Schedule Activity Diagram (due) | 3% |
| | | Project Charter (due) | 3% |
| | Journal | Journal Part 1: Individual Progress Report (due) | 1% |

***Unit 3: PLANNING THE PROJECT: PART II***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Summarize and record planned activities, and document executed activities, problems encountered, and solutions.
- Assign resources and milestones in Microsoft Project.
- Explain the use of Gantt charts to view a project schedule and how to demonstrate the progress of a project.
- Research and design a network infrastructure with hardware, software, technology, services, and implementation strategies.

| READING ASSIGNMENT | GRADED ACTIVITIES/DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • Wood, Chapters 4-6 | Assignment | Budget/Bill of Materials (assigned) | 0% |
| | | Preliminary Schedule (due) | 3% |
| | | WBS and WBS Dictionary (due) | 3% |
| | Journal | Journal Part 2: Individual Progress Report (due) | 1% |

***Unit 4: PROJECT EXECUTION: PART I***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Summarize and record planned activities, and document executed activities, problems encountered, and solutions.
- Research and develop a testing plan specific to the project.
- Research and develop a Change Management Plan.
- Determine the equipment, software, and labor hours necessary for the project, and create a bill of materials within the project budget.
- Determine performance, standards, and metrics necessary for achieving quality deliverables.
- Review networking concepts in preparation for individual comprehensive skills exam.
- Determine the progress of a project by comparing the project timeline to resource assignment.

| READING ASSIGNMENT | GRADED ACTIVITIES/DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • PMBOK Sections<br>  ○ 4.3.1.2: Approved Change Requests<br>  ○ 4.5: Perform Integrated Change Control (introduction)<br>  ○ 8.1.3: Plan Quality: Outputs | Assignment | Change Management Plan (assigned) | 0% |
| | | Quality Plan (assigned) | 0% |
| | | Budget/Bill of Materials (due) | 3% |
| | Journal | Journal Part 3: Individual Progress Report (due) | 1% |

***Unit 5: PLANNING THE PROJECT PART III AND SKILLS EXAM***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Explain networking systems administration topics and techniques as part of the individual skills exam.
- Explain and identify the essential steps and tools for effective risk management mitigation.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Determine the progress of a project by comparing the project timeline to resource assignment.
- Design a network with all hardware, software, technology, services, implementation, and management details using the case study approach.

| READING ASSIGNMENT | GRADED ACTIVITIES / DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all |

| | | | graded work) |
|---|---|---|---|
| • PMBOK Sections<br>○ Chapter 11: Project Risk Management (Overview) | Assignment | Risk Management Plan (assigned) | 0% |
| | | Quality Plan (due) | 3% |
| | | Change Management Plan (due) | 3% |
| | Presentation | Presentation 1: 50% Completion Presentation (assigned) | 0% |
| | Exam | Individual Skills Exam | 15% |
| | Journal | Journal Part 4: Individual Progress Report (due) | 1% |

***Unit 6: PROJECT EXECUTION PART II***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Demonstrate competency in completing and communicating the planning portion of a project.
- Demonstrate the ability to implement a planned project according to the project schedule.
- Demonstrate the best practices of project communication.

| **READING ASSIGNMENT** | **GRADED ACTIVITIES / DELIVERABLES** | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Assignment | Risk Management Plan (due) | 3% |
| | Presentation | Presentation 1: 50% Completion Presentation (due) | 1% |
| | Journal | Journal Part 5: Individual Progress Report (due) | 1% |
| | Project | Active Directory (draft due) | 1% |
| | | Network Schematic (draft due) | 1% |
| | | Server Configuration (draft due) | 1% |
| | | Network Infrastructure Configuration (draft due) | 1% |

***Unit 7: PROJECT EXECUTION PART III AND MONITORING & CONTROL PART I***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Describe the Monitor and Control phase of the project life cycle.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Explain the use of Gantt charts to view a project schedule and demonstrate the progress of a project.

- Demonstrate competency in completing and communicating the planning portion of a project.
- Demonstrate the ability to implement a planned project according to the project schedule.

| READING ASSIGNMENT | GRADED ACTIVITIES / DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Project | Client Configuration (assigned) | 0% |
| | Journal | Journal Part 6: Individual Progress Report | 1% |

***Unit 8: PROJECT EXECUTION PART IV AND MONITORING & CONTROL PART II***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Describe the Monitor and Control phase of the project life cycle.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Explain the use of Gantt charts to view a project schedule and demonstrate the progress of a project.
- Demonstrate competency in completing and communicating the planning portion of a project.
- Demonstrate the ability to implement a planned project according to the project schedule.

| READING ASSIGNMENT | GRADED ACTIVITIES / DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Journal | Journal Part 7: Individual Progress Report | 1% |
| | Project | Client Configuration (draft due) | 1% |

***Unit 9: PROJECT EXECUTION PART V AND MONITORING & CONTROL PART III***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Describe the Monitor and Control phase of the project life cycle.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Demonstrate competency in completing and communicating the planning portion of a project.
- Demonstrate the ability to implement a planned project according to the project schedule.
- Utilize Gantt charts to compare work progress against the project schedule.

| READING ASSIGNMENT | GRADED ACTIVITIES / DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Journal | Journal Part 8: Individual Progress Report | 1% |
| | Presentation | Presentation 2: 95% Completion Presentation (assigned) | 0% |
| | Project | Implementation Demonstration (assigned) | 0% |
| | | Lessons Learned (assigned) | 0% |

***Unit 10: MOCK PRESENTATION AND PROJECT CLOSING***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Demonstrate a high level of knowledge of key concepts in network systems administration.
- Summarize and record planned activities and document executed activities, problems encountered, and solutions.
- Describe the Closing phase of a project life cycle.
- Design presentation material to demonstrate knowledge of subject matter and present solutions.
- Demonstrate business and professional presentation skills.
- Submit detailed documentation to support a team's design vision and final proposed solution.

| READING ASSIGNMENT | GRADED ACTIVITIES / DELIVERABLES | | |
|---|---|---|---|
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Presentation | Presentation 2: 95% Completion Presentation (due) | 3% |
| | Project | Active Directory (final due) | 1% |
| | | Network Schematic (final due) | 1% |
| | | Server Configuration (final due) | 4% |
| | | Network Infrastructure Configuration (final due) | 4% |
| | | Client Configuration (final due) | 4% |
| | | Implementation Demonstration (due) | 11% |
| | Journal | Journal Part 9: Individual Progress Report (due) | 1% |

***Unit 11: FINAL PROFESSIONAL PRESENTATION AND PROJECT CLOSE***

***Out-of-class work:*** 10 hours

Upon completion of this unit, students are expected to:

- Design presentation material to demonstrate knowledge of subject matter and present solutions.
- Demonstrate business and professional presentation skills.

| • Submit detailed documentation to support a team's design vision and final proposed solution. | | | |
|---|---|---|---|
| **READING ASSIGNMENT** | **GRADED ACTIVITIES / DELIVERABLES** | | |
| | **Grading Category** | **Activity/Deliverable Title** | **Grade Allocation** (% of all graded work) |
| • None | Assignment | Lessons Learned (due) | 2% |
| | Presentation | Presentation 3: Final Project Presentation and Demonstration | 6% |
| | Teamwork | Individual Peer Reviews | 10% |

Note: Your instructor may add a few learning activities that will change the grade allocation for each assignment in a category. The overall category percentages will not change.

# Evaluation and Grading

**Evaluation Criteria**
The student's learning in this course will be evaluated using the following methods:

NT2799 COURSE SNAPSHOT

| Grading Category | Grade Book Category Weight (% of Course Total) | Unit | Graded Deliverable | Grade Allocation (% of Course Total) | Measuring Rubric (Grade book Assignment Name) |
|---|---|---|---|---|---|
| A. Assignments | 35% | 2 | Project Charter | 3% | A-X2-1 Information Analysis |
| | | 2 | Project Schedule Activity Diagram | 3% | A-3-1 Resources and Project Mgmt |
| | | 3 | Preliminary Schedule | 3% | A-3-1 Resources and Project Mgmt |
| | | 3 | WBS and WBS Dictionary | 3% | A-3-2 Product Knowledge |
| | | 4 | Budget/Bill of Materials | 3% | A-1-1 Foundation Theory |
| | | 5 | Change Management Plan | 3% | A-3-1 Resources and Project Mgmt |
| | | 5 | Quality Plan | 3% | A-5-1 Network Development Process |
| | | 6 | Risk Management Plan | 3% | A-1-1 Foundation Theory |
| | | 11 | Lessons Learned | 2% | A-4-1 Trends |
| | | 2-10 | Journal: Individual Progress Reports | 9% | A-4-1 Trends |
| B. Project | 30% | 6 | Active Directory Draft | 1% | B-2-1 Network Hardware and Software |
| | | 6 | Network Schematic Draft | 1% | B-2-1 Network Hardware and Software |
| | | 6 | Server Configuration Draft | 1% | B-6-1 Install, Configure and Test |
| | | 6 | Network Infrastructure Configuration Draft | 1% | B-6-1 Install, Configure and Test |
| | | 8 | Client Configuration Draft | 1% | B-5-1 Network Development Process |
| | | 10 | Active Directory Final | 1% | B-6-1 Install, Configure and Test |
| | | 10 | Network Schematic Final | 1% | B-5-1 Network Development Process |
| | | 10 | Server Configuration Final | 4% | B-6-1 Install, Configure and Test |
| | | 10 | Network Infrastructure Configuration Final | 4% | B-6-1 Install, Configure and Test |
| | | 10 | Client Configuration Final | 4% | B-6-1 Install, Configure and Test |
| | | 10 | Implementation Demo | 11% | B-6-2 Administration and Maintenance |

| | | | | | |
|---|---|---|---|---|---|
| C. Presentation | 10% | 6 | 50% Completion Presentation | 1% | C-X4-1 Communication |
| | | 10 | 95% Completion Presentation | 3% | C-X4-1 Communication |
| | | 11 | Final Project Presentation and Demonstration | 6% | C-X4-1 Communication |
| D. Teamwork | 10% | 11 | Teamwork Evaluation | 10% | D-X5-2 Teamwork |
| E. Individual Skills Assessment | 15% | 5-11 | Review based on questions and respond in spoken interview form | 15% | All Applicable |
| Total | 100% | | | 100% | |

## COURSE GRADING RUBRIC
## NT2799—NSA Capstone Project

Campus: _____
Faculty Name: _____
Student Name: _____
Directions: Please assign a percentage grade on the line for each measuring rubric (the rubric corresponds to the grade book assignment name).

**A. Assignments (35% of total course grade)**

**Unit 2, Project Charter**

**_____ A-*X2-1 Information Analysis***:

- 90-100%: The student uses tools to locate and organize source information independently, quickly and effectively, and accurately evaluates the data retrieved.
- 80-89%: The student readily locates and organizes source information and evaluates the data retrieved.
- 70-79%: The student locates and organizes source information in most cases and evaluates the data retrieved.
- 60-69%: The student often needs help locating, organizing and evaluating source information.
- Below 60%: The student rarely locates, organizes and evaluates source information independently.

**Unit 2, Project Schedule Activity Diagram**

**_____ A-*3-1 Resources and Project Management***

- 90-100%: Effectively plan, manage and maintain network infrastructure and related resources by building and executing dynamic processes based on established project management theories and best practices, yielding a stable and productive network infrastructure environment
- 80-89%: Plan, manage and maintain network infrastructure and related resources by adopting established processes based on project management theories and best practices with expected outcomes
- 70-79%: Plan, manage and maintain the network infrastructure and related resources by using typical tools and methods of project management, yielding outcomes that can basically meet the expected criteria

- 60-69%: Plan, manage and maintain network infrastructure and related resources that can meet most of the expected performance requirements with visible room for improvement
- Below 60%: Random and ineffective management of resources in the network development and maintenance projects with unpredictable results.

**Unit 3, Preliminary Schedule**

**_____ A-*3-1 Resources and Project Management***

- 90-100%: Effectively plan, manage and maintain network infrastructure and related resources by building and executing dynamic processes based on established project management theories and best practices, yielding a stable and productive network infrastructure environment
- 80-89%: Plan, manage and maintain network infrastructure and related resources by adopting established processes based on project management theories and best practices with expected outcomes
- 70-79%: Plan, manage and maintain the network infrastructure and related resources by using typical tools and methods of project management, yielding outcomes that can basically meet the expected criteria
- 60-69%: Plan, manage and maintain network infrastructure and related resources that can meet most of the expected performance requirements with visible room for improvement
- Below 60%: Random and ineffective management of resources in the network development and maintenance projects with unpredictable results.

**Unit 3, WBS and WBS Dictionary**

**_____ A-*3-2 Product Knowledge***

- 90-100%: Categorize technologies, products and services covered in the program with analysis on specific regulatory, license and cost impacts
- 80-89%: Categorize technologies, products and services covered in the program by their regulatory and license properties with some reference to cost factors
- 70-79%: Fundamental understanding of the licensure requirements with specific technology and software and their implementation impacts.
- 60-69%: Identify some technologies and products covered in the program with generic reference to regulatory and license requirements and some cost concepts
- Below 60%: Inadequate knowledge of technologies, products and services in terms of their license and cost properties

**Unit 4, Budget/Bill of Materials**

**_____ A-*1-1 Foundation Theory***

- 90-100%: Efficiently plan and design network infrastructure and configure network devices using most appropriate mathematical methods and tools that yield optimal network performance
- 80-89%: Plan and design networks and configure network devices using correct mathematical methods with accurate results
- 70-79%: Apply required mathematical methods in designing network infrastructure within defined performance range
- 60-69%: Perform most of the required mathematical calculations in designing network infrastructure with occasional needs for recalculation and reconfigurations

- Below 60%: Inability to perform mathematical calculations to serve the purpose of designing network infrastructure and configuring network devices

**Unit 5, Change Management Plan**

**_____ A-*3-1 Resources and Project Management***

- 90-100%: Effectively plan, manage and maintain network infrastructure and related resources by building and executing dynamic processes based on established project management theories and best practices, yielding a stable and productive network infrastructure environment
- 80-89%: Plan, manage and maintain network infrastructure and related resources by adopting established processes based on project management theories and best practices with expected outcomes
- 70-79%: Plan, manage and maintain the network infrastructure and related resources by using typical tools and methods of project management, yielding outcomes that can basically meet the expected criteria
- 60-69%: Plan, manage and maintain network infrastructure and related resources that can meet most of the expected performance requirements with visible room for improvement
- Below 60%: Random and ineffective management of resources in the network development and maintenance projects with unpredictable results.

**Unit 5, Quality Plan**

**_____ *A-5-1 Network Development Process***

- 90-100%: Plan and design cost-effective network solutions by following a robust process of research, analysis, development, testing and deployment lifecycle with professional documentation
- 80-89%: Plan, design and implement network solutions by applying specific development process observing product development lifecycle with systematic documentation
- 70-79%: Plan, design and implement network solutions by following a visible process with adequate documentation
- 60-69%: Design and implement network solutions by following some methods with minimum documentation
- Below 60%: Develop and/or install networks with no clear indication of following a specific process and systematic method; little documentation

**Unit 6, Risk Management Plan**

**_____ A-*1-1 Foundation Theory***

- 90-100%: Efficiently plan and design network infrastructure and configure network devices using most appropriate mathematical methods and tools that yield optimal network performance
- 80-89%: Plan and design networks and configure network devices using correct mathematical methods with accurate results
- 70-79%: Apply required mathematical methods in designing network infrastructure within defined performance range
- 60-69%: Perform most of the required mathematical calculations in designing network infrastructure with occasional needs for recalculation and reconfigurations
- Below 60%: Inability to perform mathematical calculations to serve the purpose of designing network infrastructure and configuring network devices

**Unit 11, Lessons Learned**

_____ ***A-4-1 Trends***

- 90-100%: Take the initiative to research to keep abreast of the developments and advancements in the IT industry, analyze their possible impacts on the employer and customers and effectively explain such trends to the stakeholders
- 80-89%: Maintain well-informed of the technological changes and directions in the IT industry and inform the employer and customers of the impact of such trends
- 70-79%: Maintain informed of the major technical developments and changes in the networking industry and able to respond to most inquires on closely work related trends with correct information
- 60-69%: Aware of major things happening in the networking industry and manage to relate most of such information to the current job with weak evidence of servicing the employer and customers with adequate analysis based on such information
- Below 60%: Unaware of major technological trends that have direct or indirect impact on the job; ineffective in finding such information and unable to communicate to the employer and customers based on such information

**Units 2 through 10, Journal: Individual Progress Reports**

_____ ***A-4-1 Trends***

- 90-100%: Take the initiative to research to keep abreast of the developments and advancements in the IT industry, analyze their possible impacts on the employer and customers and effectively explain such trends to the stakeholders
- 80-89%: Maintain well-informed of the technological changes and directions in the IT industry and inform the employer and customers of the impact of such trends
- 70-79%: Maintain informed of the major technical developments and changes in the networking industry and able to respond to most inquires on closely work related trends with correct information
- 60-69%: Aware of major things happening in the networking industry and manage to relate most of such information to the current job with weak evidence of servicing the employer and customers with adequate analysis based on such information
- Below 60%: Unaware of major technological trends that have direct or indirect impact on the job; ineffective in finding such information and unable to communicate to the employer and customers based on such information

**B. Project (30% of total course grade)**

**Unit 6, Active Directory Draft**

_____ ***B-2-1 Network Hardware and Software***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards

- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 6, Network Schematic Draft**

**_____ *B-2-1 Network Hardware and Software***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 6, Server Configuration Draft**

**_____ *B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 6, Network Infrastructure Configuration Draft**

**_____ *B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards

- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 8, Client Configuration Draft**

_____ ***B-5-1 Network Development Process***

- 90-100%: Plan and design cost-effective network solutions by following a robust process of research, analysis, development, testing and deployment lifecycle with professional documentation
- 80-89%: Plan, design and implement network solutions by applying specific development process observing product development lifecycle with systematic documentation
- 70-79%: Plan, design and implement network solutions by following a visible process with adequate documentation
- 60-69%: Design and implement network solutions by following some methods with minimum documentation
- Below 60%: Develop and/or install networks with no clear indication of following a specific process and systematic method; little documentation

**Unit 10, Active Directory Final**

_____ ***B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 10, Network Schematic Final**

_____ ***B-5-1 Network Development Process***

- 90-100%: Plan and design cost-effective network solutions by following a robust process of research, analysis, development, testing and deployment lifecycle with professional documentation
- 80-89%: Plan, design and implement network solutions by applying specific development process observing product development lifecycle with systematic documentation

- 70-79%: Plan, design and implement network solutions by following a visible process with adequate documentation
- 60-69%: Design and implement network solutions by following some methods with minimum documentation
- Below 60%: Develop and/or install networks with no clear indication of following a specific process and systematic method; little documentation

**Unit 10, Server Configuration Final**

**_____ *B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 10, Network Infrastructure Configuration Final**

**_____ *B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards
- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 10, Client Configuration Final**

**_____ *B-6-1 Install, Configure and Test***

- 90-100%: Fluent and accurate in categorizing major networking hardware and software by differentiating their features, purposes, functions and specifications with specific reference to associated standards
- 80-89%: Ability to differentiate purposes, functions, and specifications of major hardware and software used in common computer networks with close reference to standards
- 70-79%: Ability to identify major hardware and software components commonly used on computer networks and to distinguish their purposes and functions with some reference to standards

- 60-69%: Ability to identify hardware and software components used in different computer networks and to describe the technical features of such components
- Below 60%: Ability to randomly name some devices and software with weak reference to their functions and specifications and little reference to standards

**Unit 10, Implementation Demo**

**_____ *B-6-2 Administration and Maintenance***

- 90-100%: Proactively plan and dynamically apply system embedded capabilities to automate major management tasks that monitor and track system performance, security and resources; provide top-level technical support to all network issues
- 80-89%: Proactively plan and effectively manage user, resources, performance, security with system documentation and perform technical support to help-desk functions
- 70-79%: Effectively manage user, resources, performance, security and perform common helpdesk functions
- 60-69%: Perform common system administration tasks and provide first tier user support without obvious obstacles
- Below 60%: Randomly perform some systems management functions with inconsistent parameters and outcomes; ineffective in user support functions

**C. Presentation (10% of total course grade)**

**Unit 6, 50% Completion Presentation**

**_____ *C-X4-1 Communication***

- 90-100%: Readily identifies purpose and audience and accurately tailors his/her communication accordingly.
- 80-89%: Identifies purpose and audience and accurately tailors communication accordingly.
- 70-79%: Correctly identifies purpose and audience when reviewing or constructing a communication piece.
- 60-69%: Struggles to articulate purpose and identify audience when reviewing or constructing a communication piece.
- Below 60%: Does not identify purpose and audience when reviewing or constructing a communication piece.

**Unit 10, 95% Completion Presentation**

**_____ *C-X4-1 Communication***

- 90-100%: Readily identifies purpose and audience and accurately tailors his/her communication accordingly.
- 80-89%: Identifies purpose and audience and accurately tailors communication accordingly.
- 70-79%: Correctly identifies purpose and audience when reviewing or constructing a communication piece.
- 60-69%: Struggles to articulate purpose and identify audience when reviewing or constructing a communication piece.
- Below 60%: Does not identify purpose and audience when reviewing or constructing a communication piece.

**Unit 11, Final Project Presentation and Demonstration**

**_____ *C-X4-1 Communication***

- 90-100%: Readily identifies purpose and audience and accurately tailors his/her communication accordingly.

- 80-89%: Identifies purpose and audience and accurately tailors communication accordingly.
- 70-79%: Correctly identifies purpose and audience when reviewing or constructing a communication piece.
- 60-69%: Struggles to articulate purpose and identify audience when reviewing or constructing a communication piece.
- Below 60%: Does not identify purpose and audience when reviewing or constructing a communication piece.
-

**D. Teamwork (10% of total course grade)**

**Unit 11, Teamwork Evaluation**

**_____** ***D-X5-2 Teamwork***

- 90-100%: Contributes appropriate effort toward completion of a collaborative product and assists teammates as requested.
- 80-89%: Contributes appropriate effort toward completion of a collaborative product.
- 70-79%: Usually contributes effort toward completion of a collaborative product.
- 60-69%: Either underperforms by not contributing or over performs by needlessly doing someone else's tasks in working toward completion of a collaborative product.
- Below 60%: Doesn't contribute to the completion of a collaborative product.

**E. Individual Skills Assessment (15% of total course grade)**

**_____ Individual Skills Assessment**

**Individual Skills Assessment Scoring Table**

| Levels of Knowledge | Number of Topics Satisfied | Number of Topics Failed | Points Earned | Points Earned |
|---|---|---|---|---|
| Synthesis/Evaluation | | | 1 | ( ) x 1.0 = ____ |
| Application/Analysis | | | 0.8 | ( ) x 0.8 = ____ |
| Knowledge/Comprehension | | | 0.6 | ( ) x 0.6 = ____ |
| **Total Points Earned** | | | | |
| Divide **Total Points Earned** by 15 (maximum number of points that can be earned), then multiply by 100 and enter the resulting percentage value in this box. This resulting value is to be copied to the Individual Skills Assessment section of the Grade Book | | | | |

For example, the student satisfied 5 questions at the top level, 5 questions at the middle level, 4 questions at the lowest level, and failed to address 1 question (total of 15 questions), this is what he/she gets:
5 x 1 = 5
5 x 0.8 = 4
4 x 0.6 = 2.4
1 x 0 = 0
5 + 4 + 2.4 + 0 = 11.4 Total Points Earned

(11.4 ÷ 15) x 100 = **76.0**

Enter this number on the line above and in the Skills Assessment section of the Grade Book for this student.

**Grade Conversion**
The final grades will be calculated from the percentages earned in the course, as follows:

| Grade | Percentage | Credit |
|---|---|---|
| A | 90–100% | 4.0 |
| B+ | 85–89% | 3.5 |
| B | 80–84% | 3.0 |
| C+ | 75–79% | 2.5 |
| C | 70–74% | 2.0 |
| D+ | 65–69% | 1.5 |
| D | 60–64% | 1.0 |
| F | <60% | 0.0 |

# Academic Integrity

All students must comply with the policies that regulate all forms of academic dishonesty or academic misconduct, including plagiarism, self-plagiarism, fabrication, deception, cheating, and sabotage. For more information on the academic honesty policies, refer to the Student Handbook and the Course Catalog.

*(End of Syllabus)*