

TASK CHECKLIST

The student:

Preparation and Planning

- sets goals and describes steps to achieve them
- uses personal initiative to formulate questions and find answers
- accesses a range of relevant information sources and recognizes when additional information is required
- interprets, organizes and combines information in thoughtful ways
- records information accurately using appropriate technical terms and supporting detail
- plans and uses time effectively, prioritizing tasks on a consistent basis
- accessing and refines approach to task and project based on feedback and reflection

Content

- lists and describes three methods of preparing a circuit board using:
 - holographic
 - silk screen
 - toner transfer
 - techniques

Content (continued)

- identifies hazards associated with the use of photo, cleaning and etching chemicals

Presenting/Reporting

- demonstrates effective use of one or more communication media:
 - e.g., Written: spelling, punctuation, grammar, format (formal/informal, technical/literary)*
 - Oral: voice projection, body language appearance, enthusiasm, evidence of prior practice*
 - Audio-visual: techniques, tools, clarity, speed and pacing*
- maintains acceptable grammatical and technical standards through proofreading and editing
- provides an introduction that describes the purpose and scope of the project
- communicates thoughts/feelings/ideas clearly to justify or challenge a position
- states a conclusion by analyzing and synthesizing the information gathered
- gives evidence of adequate research through a reference list of information sources

REFLECTIONS/COMMENTS:

Standard

Performance rating of 1 for each applicable task

Rating Scale

The student:

- 4** exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3** meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2** meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1** meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.

TASKS	OBSERVED RATING				
	4	3	2	1	N/A
Preparation and Planning	4	3	2	1	N/A
Content	4	3	2	1	N/A
Presenting/ Reporting	4	3	2	1	N/A

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Content

- uses block diagrams to show the function and stages of operation of electronic devices such as:
 - TV
 - VCR
 - camcorder
 - computer
 - microwave oven

Content (continued)

- lists and describes safe testing techniques to identify system faults

Presenting/Reporting

- demonstrates effective use of one or more communication media:
 - e.g., Written: spelling, punctuation, grammar, format (formal/informal, technical/literary)*
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Performance rating of 1 for each applicable task

Rating Scale

The student:

- 4** exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence. *Quality, particularly details and finishes, and productivity are consistent and exceed standards. Analyzes and provides effective client/customer services beyond expectations.*
- 3** meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively. *Quality and productivity are consistent. Analyzes and provides effective client/customer services.*
- 2** meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately. *Quality and productivity are reasonably consistent. Identifies and provides customer/client services.*
- 1** meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately. *Quality of work is reasonably consistent. Provides a limited range of customer/client services.*

TASKS	OBSERVED RATING				
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Content

- explains the principles of operation of electrical components used as safety devices such as:
 - plug and cartridge fuse
 - renewable and time delay fuse
 - bi-metal and time delay circuit breaker
 - magnetic and thermal overload relays
 - GFI circuit protectors

Content (continued)

- identifies the operating characteristics of single-phase transformers
- explains the operation of three-phase low voltage alternators

Presenting/Reporting

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Content

- compares the internal architecture of various families of microprocessors
- describes how to program a microprocessor using an instruction set
- describes input/output operations in microprocessors

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Content

- describes microprocessor interface output and input circuits
- explains the operation of a serial interface device
- explains how to interface a D/A and a A/D converter to a microprocessor

Content continued)

Presenting/Reporting

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Content

- explains the electromotive principles and operational characteristics of common AC and DC motors such as:
 - shaded pole
 - split phase
 - capacitive start and run
 - three-phase
 - universal
 - single-phase synchronous
 - stepper
 - servo
 - permanent magnet

Presenting/Reporting

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Note: The **new** 2004 Electro-Technologies Advanced Assessment Tools have been placed at the end of Section G. to avoid repagination. Therefore, the **new** 2004 Electro-Technologies Advanced Assessment Tools continue on pages G.52-G.56.

ASSESSMENT CHECKLIST: Network Operating Systems

ELT3310-1

Student Name: _____

Teacher: _____

Course/Project(s): _____

Date: _____

CRITERIA	OBSERVATION/ RATING					STANDARD
Management	4	3	2	1	0	2
Teamwork	4	3	2	1	0	2
Basic Concepts	4	3	2	1	0	2
Application and Utilization	4	3	2	1	0	2

STANDARD IS 3 IN EACH APPLICABLE CRITERION UNLESS OTHERWISE STATED

Rating Scale

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- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

CRITERIA

The student:

Management

- interprets and carries out instructions accurately
- plans and uses time effectively in a logical sequence
- complies with established network use policies and practices
- uses personal initiative to formulate questions and find answers
- gathers and responds to feedback regarding approach to task and project status
- attempts to solve problems prior to requesting help
- demonstrates ethical use of information technologies and sources

Teamwork

- cooperates with group members
- shares work appropriately among group members
- negotiates solutions to problems
- displays effective communication skills
- exhibits basic teamwork skills; e.g., cooperation, appropriate conduct, leadership, commitment, negotiation, sharing

Basic Concepts

- explains differences between peer-to-peer and server-based networks
- identifies generic functions and administrative tasks common to all network operating systems

Basic Concepts (continued)

- describes and compares capabilities and functions of network operating systems in common use with respect to:
 - evolution and major features
 - protocols and interoperability
 - client support
 - authentication and security
 - file, print and directory services
 - routing services
- identifies criteria involved in network planning and implementing a network operating system
- outlines a general strategy for troubleshooting network problems

Application and Utilization

- selects network operating system options that are appropriate in specific networking environments
- analyzes the needs of a small company and recommends an appropriate network operating system solution
- installs and configures:
 - two or more different network operating systems
 - network clients to interact with and access the resources of each network operating system
- analyzes and troubleshoots connectivity problems resulting from the installation of network and/or client operating systems
- uses appropriate technical terms and acronyms

COMMENTS

ASSESSMENT CHECKLIST: Routing Fundamentals

ELT3320-1

Student Name: _____

Teacher: _____

Course/Project(s): _____

Date: _____

CRITERIA	OBSERVATION/ RATING					STANDARD
Management	4	3	2	1	0	3
Teamwork	4	3	2	1	0	3
Basic Concepts	4	3	2	1	0	3
Application and Utilization	4	3	2	1	0	3

STANDARD IS 3 IN EACH APPLICABLE CRITERION UNLESS OTHERWISE STATED

Rating Scale

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CRITERIA

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Teamwork

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Basic Concepts

- describes an internetwork and the path determination function of a router
- compares the function of bridges, switches, routers and gateways

Basic Concepts (continued)

- describes the operation of a router
- distinguishes between:
 - static and dynamic routing
 - routable and nonroutable protocols
- describes and illustrates the function of IP addressing in a routed network
- explains the concept of address resolution and applications of ARP
- describes the purpose and function of:
 - distance-vector and link-state routing protocols
 - interior and exterior routing protocols
- explains the basic architecture and function of common routing protocols (i.e., RIP, OSPF, BGP)
- explains SNMP and its application in routing

Application and Utilization

- interprets and uses:
 - router interface and interface modes
 - basic show and test commands
 - startup sequence and setup commands
 - configuration files and modes
- performs basic router configuration routines:
 - demonstrates router startup and log-in procedures
 - uses command history and editing features
 - configures and verifies IP addresses
 - configures routing protocols and interface
 - configures standard and extended access lists
- demonstrates ability to troubleshoot a routing loop
- configures a router for a standard 5-router topology
- uses appropriate technical terms and acronyms

COMMENTS

ASSESSMENT CHECKLIST: Wide Area Networks

ELT3330–1

Student Name: _____

Teacher: _____

Course/Project(s): _____

Date: _____

CRITERIA	OBSERVATION/ RATING					STANDARD
Management	4	3	2	1	0	3
Teamwork	4	3	2	1	0	3
Basic Concepts	4	3	2	1	0	3
Application and Utilization	4	3	2	1	0	3

STANDARD IS 3 IN EACH APPLICABLE CRITERION UNLESS OTHERWISE STATED

Rating Scale

The student:

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<p>CRITERIA</p> <p><i>The student:</i></p> <p>Management</p> <ul style="list-style-type: none"> <input type="checkbox"/> interprets and carries out instructions accurately <input type="checkbox"/> plans and uses time effectively in a logical sequence <input type="checkbox"/> complies with established network use policies and practices <input type="checkbox"/> uses personal initiative to formulate questions and find answers <input type="checkbox"/> gathers and responds to feedback regarding approach to task and project status <input type="checkbox"/> attempts to solve problems prior to requesting help <input type="checkbox"/> demonstrates ethical use of information technologies and sources <p>Teamwork</p> <ul style="list-style-type: none"> <input type="checkbox"/> cooperates with group members <input type="checkbox"/> shares work appropriately among group members <input type="checkbox"/> negotiates solutions to problems <input type="checkbox"/> displays effective communication skills <input type="checkbox"/> exhibits basic teamwork skills; e.g., cooperation, appropriate conduct, leadership, commitment, negotiation, sharing <p>Basic Concepts</p> <ul style="list-style-type: none"> <input type="checkbox"/> identifies the structure and function of a WAN <input type="checkbox"/> describes and gives examples of analog and digital carrier systems and services <input type="checkbox"/> describes basic processes of modulation, synchronization and multiplexing 	<p>Basic Concepts (continued)</p> <ul style="list-style-type: none"> <input type="checkbox"/> explains basic circuit-switching and packet-switching processes <input type="checkbox"/> identifies the functions and services associated with common: <ul style="list-style-type: none"> • circuit-switching technologies (i.e., ISDN, DSL) • packet-switching technologies (i.e., x.25, Frame Relay, ATM, SONET/SDH) <input type="checkbox"/> defines the concept of quality of service (QoS) <input type="checkbox"/> describes and compares different methods of remote access <input type="checkbox"/> identifies and explains remote access protocols and services (e.g., SLIP, PPP, PPTP, ICP) <input type="checkbox"/> identifies internal and external security issues, and the function/benefits of firewalls, proxies and common security protocols (e.g., IPsec, Kerberos, L2TP, SSL) <p>Application and Utilization</p> <ul style="list-style-type: none"> <input type="checkbox"/> compares the QoS offered by selected circuit-switching and packet-switching technologies <input type="checkbox"/> given a need for remote connectivity in a small office or home office scenario: <ul style="list-style-type: none"> • recommends a remote access connectivity solution • selects a remote access protocol/service • configures client and server for remote access • troubleshoots potential connection problems <input type="checkbox"/> predicts the impact of implementing a particular security strategy on network functionality <input type="checkbox"/> analyzes emerging WAN technologies with respect to design, evolution and benefits <input type="checkbox"/> uses appropriate technical terms and acronyms
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<p>COMMENTS</p>

ASSESSMENT CHECKLIST: Internet Processes

ELT3340–1

Student Name: _____

Teacher: _____

Course/Project(s): _____

Date: _____

CRITERIA	OBSERVATION/ RATING					STANDARD
Management	4	3	2	1	0	3
Teamwork	4	3	2	1	0	3
Basic Concepts	4	3	2	1	0	3
Application and Utilization	4	3	2	1	0	3

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<p>COMMENTS</p>

ASSESSMENT CHECKLIST: Network Management

ELT3350-1

Student Name: _____

Teacher: _____

Course/Project(s): _____

Date: _____

CRITERIA	OBSERVATION/ RATING					STANDARD
Management	4	3	2	1	0	3
Teamwork	4	3	2	1	0	3
Basic Concepts	4	3	2	1	0	3
Application and Utilization	4	3	2	1	0	3

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Teamwork

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Basic Concepts

- gives reasons for protecting data in a LAN
- describes the nature, scope and source of potential risks to data in a LAN
- identifies major components of a data backup strategy
- gives reasons for network security

Basic Concepts (continued)

- identifies the characteristics of security risks imposed by viruses, worms, Trojan horses and direct attack
- explains strategies for protecting a LAN from internal and external security risks
- identifies common sources of network problems
- outlines a general strategy for troubleshooting network problems
- describes key functions and roles related to network maintenance and support
- identifies technical and professional career paths in network administration, maintenance and/or support, and related employment and training opportunities

Application and Utilization

- demonstrates appropriate use of:
 - troubleshooting tools (e.g., cable tester, crossover cable, digital voltmeter, protocol analyzer, tone generator)
 - software commands to check configuration or connectivity (e.g., IPCONFIG, PING, TRACERT)
- designs a data backup strategy, designs a security plan, and troubleshoots common network problems, given a small office or home office network scenario
- develops a plan to maintain and support an operating network
- organizes/refines a portfolio and résumé suitable to present qualifications for an entry-level networking position
- uses appropriate technical terms and acronyms

COMMENTS