

# Idaho PTE Business Education Course with Essential Learning Outcomes and Learning Indicators

Course Title	ADVANCED NETWORKING		
SDPTE Course ID	BE 0290	IBED	IBED 10252

A course designed for students to develop skills and competencies for the installation and maintenance of computer equipment in the district, community and industry using cable, fiber optics, and wireless communication. Students will connect users to computer systems, keep documentation on network performance and install upgrades when necessary. A personal code of ethics for information use and management will be established.

Term		Preq	BE 0280
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Notes:

## **Business Law BLaw\_1: Demonstrate Knowledge of Basics of the Law**

### **BLaw\_1.1 Analyze the relationship between ethics and the law.**

Learning Indicator: BLaw_1.1.1	Explain a person's responsibility to obey the law
Learning Indicator: BLaw_1.1.2	List the most common sources of the law
Learning Indicator: BLaw_1.1.3	Identify ethical character traits (e.g., honesty, integrity, compassion, justice)
Learning Indicator: BLaw_1.1.4	Explain the relationships between law and ethics
Learning Indicator: BLaw_1.1.5	Describe the role of values in constructing an ethical code and a legal system
Learning Indicator: BLaw_1.1.6	Identify unethical and illegal conduct and related consequences
Learning Indicator: BLaw_1.1.7	Describe how to develop an ethical and legal life style
Learning Indicator: BLaw_1.1.8	Explain the way social forces may sometimes conflict
Learning Indicator: BLaw_1.1.9	Demonstrate how a rule of law may be a synthesis of conflicting social forces
Learning Indicator: BLaw_1.1.10	Compare and contrast differences in ethical and legal systems from state to state and nation to nation

## **Business Law BLaw\_7: Demonstrate Knowledge of Computer Law**

### **BLaw\_7.1 Explain how the advances in computer technology impact upon such areas as property law, contract law, criminal law, and international law.**

Learning Indicator: BLaw_7.1.1	Define the key terms and new issues involved in computer law including security, privacy, computer crime and viruses
Learning Indicator: BLaw_7.1.2	Determine when a computer program can be protected by a patent or a copyright and explain the steps in applying for each
Learning Indicator: BLaw_7.1.3	Identify the circumstances under which the copyright of a computer program has been violated
Learning Indicator: BLaw_7.1.4	Determine when computer-related contracts are service contracts and when they are sale of goods contracts
Learning Indicator: BLaw_7.1.5	Outline the various claims and defenses that are available in civil suits involving computer contracts
Learning Indicator: BLaw_7.1.6	Explain how common law, constitutional law, statutory law, and administrative regulations can be used to prevent the use of computers to invade privacy
Learning Indicator: BLaw_7.1.7	Outline the various types of federal and state statutes designed to combat computer crime
Learning Indicator: BLaw_7.1.8	Discuss the impact of the law of different countries and the impact of international law on computer law

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## **Communications Comm\_3: Demonstrate Knowledge of Technological Communications**

### **Comm\_3.1 Use technology to enhance the effectiveness of communications.**

Learning Indicator: Comm_3.1.1	Demonstrate proper telephone etiquette, including cellular phones
Learning Indicator: Comm_3.1.2	Demonstrate basic keyboarding and computer functions
Learning Indicator: Comm_3.1.3	Use basic software applications (e.g., word processing, spreadsheets, etc.)
Learning Indicator: Comm_3.1.4	Use CD-ROMs, laser disks, videos, and modems for knowledge acquisition
Learning Indicator: Comm_3.1.5	Project a positive first impression on the telephone
Learning Indicator: Comm_3.1.6	Use the telephone to gather personal and consumer information
Learning Indicator: Comm_3.1.7	Use basic functions of databases, spreadsheets, and programming languages by formatting documents
Learning Indicator: Comm_3.1.8	Refine documents using an electronic spell checker, a thesaurus and a grammar checker
Learning Indicator: Comm_3.1.9	Use a wide variety of references and research resources such as electronic bulletin boards and information services
Learning Indicator: Comm_3.1.10	Operate electronic message technologies to include voice mail, conference calls, pagers, and e-mail
Learning Indicator: Comm_3.1.11	Use computer networks (e.g., communicating computers, Internet, or on-line databases) to facilitate collaborative or individual learning and communicating
Learning Indicator: Comm_3.1.12	Discuss the use of the following communication systems: WATS lines, LAN systems, cellular technology, and voice recognition dictation
Learning Indicator: Comm_3.1.13	Enhance documents through the use of advanced layout, design, and graphics production software and scanning hardware
Learning Indicator: Comm_3.1.14	Address the ethical issues regarding ownership of information generated electronically
Learning Indicator: Comm_3.1.15	Apply the rules of electronic messaging etiquette
Learning Indicator: Comm_3.1.16	Evaluate the select messages which may be addressed best by electronic media
Learning Indicator: Comm_3.1.17	Incorporate the use of international electronic resources such as the Internet to complete higher level projects
Learning Indicator: Comm_3.1.18	Use techniques to protect confidential messages that are transmitted via technology to avoid identity theft

## **International Business IntB\_3: Demonstrate Knowledge of International Business Communications**

### **IntB\_3.3 Apply technology to communication in a necessary and appropriate manner for effective and profitable international business relations.**

Learning Indicator: IntB_3.3.1	Communicate internationally using electronic communications such as the telephone, fax, telex, and other electronic communication channels such as the Internet and e-mail
Learning Indicator: IntB_3.3.2	Evaluate which telecommunication methods are most appropriate for given international business situations

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## Information Systems IS\_1: Demonstrate Knowledge of the Foundations of Information Systems

### IS\_1.2 Demonstrate a knowledge of computers and the ability to use them.

Learning Indicator: IS_1.2.1	Describe how to cold boot (start up) and warm boot (restart/reset) a computer. Explain the difference. Which should be attempted first?
Learning Indicator: IS_1.2.2	Identify (list) the basic components of your computer system and peripherals
Learning Indicator: IS_1.2.3	Define, explain or demonstrate written knowledge of the following components: Ports Modem, RAM, CPU, Mouse, File Server, Network (LAN & WAN), Serial Ports, Parallel Ports, Operating Systems, Files, Folders, Subfolders, Hard Drive, Storage Disks, CD-ROM, Zip Drives, LCD Displays
Learning Indicator: IS_1.2.4	List and describe the different types of printers available and their main differences

### IS\_1.3 Identify the need for applications of technology in business, industry, society and on a global scale.

Learning Indicator: IS_1.3.1	Demonstrate the ability to access information regarding applications of computers and technology in business, industry, society and on a global scale
Learning Indicator: IS_1.3.2	Cite uses of computer and technology in business, industry, society and on a global scale
Learning Indicator: IS_1.3.3	Create a brief list of business, industry, society and global references and sources where information about applications of computers and technology can be found

## Information Systems IS\_2: Demonstrate Knowledge of Industry Standard Software Applications

### IS\_2.1 Select and apply word processing software.

Learning Indicator: IS_2.1.1	Explain the purposes, functions, and common features of word processing software
Learning Indicator: IS_2.1.2	Explain the meaning of common word processing terminology
Learning Indicator: IS_2.1.3	Sequence and define steps of an information processing cycle
Learning Indicator: IS_2.1.4	Use word processing software to demonstrate file functions including creating, modifying, storing, retrieving, printing, and merging documents
Learning Indicator: IS_2.1.5	Demonstrate editing functions including cutting, pasting, importing and exporting text and graphics
Learning Indicator: IS_2.1.6	Apply layout and insert functions including tabs, margins, hanging indents, word-wrap, columns, headers/footers, and tables
Learning Indicator: IS_2.1.7	Apply formatting functions including fonts, sizes, styles, and positioning
Learning Indicator: IS_2.1.8	Apply word processing functions including spell checking, thesaurus, grammar checking, and the help functions of the software
Learning Indicator: IS_2.1.9	Proofread and edit documents for accuracy and content, and for correct grammar, spelling, and punctuation
Learning Indicator: IS_2.1.10	Input, edit, store, and output letters, memorandums, tables, and reports
Learning Indicator: IS_2.1.11	Use an office operations manual

### IS\_2.2 Select and apply spreadsheet software.

Learning Indicator: IS_2.2.1	Explain the purposes, functions, and common features of spreadsheet software
Learning Indicator: IS_2.2.2	Explain the meaning of common spreadsheet terms
Learning Indicator: IS_2.2.3	Use spreadsheet software to demonstrate file functions including creating, saving, loading, printing, and merging documents

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Learning Indicator: IS_2.2.4	Demonstrate editing functions including inserting, cutting, pasting, and importing of text into spreadsheets
Learning Indicator: IS_2.2.5	Apply formatting functions including fonts, styles, size, and formulas
Learning Indicator: IS_2.2.6	Apply layout functions including columns, rows, and sheets
Learning Indicator: IS_2.2.7	Demonstrate ability to apply tool functions including sorting, navigating, and searching
Learning Indicator: IS_2.2.8	Apply tools including spell checking, thesaurus, grammar checking, and the help functions of the software
Learning Indicator: IS_2.2.9	Design and enter common formulas that permit users to analyze spreadsheet data
Learning Indicator: IS_2.2.10	Test spreadsheet formulas and design for accuracy

## Information Systems IS\_3: Demonstrate Knowledge of Common Applications of Information Systems

### IS\_3.1 Identify, select, evaluate, and use application software.

Learning Indicator: IS_3.1.1	Identify the types of application software and explain their purpose or use
Learning Indicator: IS_3.1.2	Select application software types appropriate for specific tasks
Learning Indicator: IS_3.1.3	Describe emerging application software
Learning Indicator: IS_3.1.4	Use reference materials, such as on-line help, vendor bulletin boards, tutorials, and manuals available for application software
Learning Indicator: IS_3.1.5	Identify, select, and apply the features of software products, such as galleries, templates, and macros
Learning Indicator: IS_3.1.6	Evaluate application software products in terms of their features
Learning Indicator: IS_3.1.7	Select application software products appropriate to various computer platforms
Learning Indicator: IS_3.1.8	Import and export text, data, and images between software programs

### IS\_3.2 Install, upgrade, and customize application software.

Learning Indicator: IS_3.2.1	Store and maintain application software
Learning Indicator: IS_3.2.2	Install, upgrade, and customize application software

### IS\_3.3 Diagnose and solve problems occurring from an application software's installation and use.

Learning Indicator: IS_3.3.1	Diagnose and solve application software problems
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## Information Systems IS\_5: Demonstrate Knowledge of Communications Systems and Networking

### IS\_5.1 Use, select, and evaluate communications and networking systems software and hardware to include hubs, switches and routers.

Learning Indicator: IS_5.1.1	Identify the types of communications hardware and explain their functions and use
Learning Indicator: IS_5.1.2	Identify the types of communications software and explain their functions and use
Learning Indicator: IS_5.1.3	Select communications hardware appropriate for specific tasks
Learning Indicator: IS_5.1.4	Select communications software appropriate for specific tasks
Learning Indicator: IS_5.1.5	Demonstrate knowledge of basic telecommunication concepts in relation to technology, applications, and system components
Learning Indicator: IS_5.1.6	Perform computer activities in communications with modems
Learning Indicator: IS_5.1.7	Identify and describe the different components of the telecommunications industry

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Learning Indicator: IS_5.1.8	Identify and explain various types of on-line services (e.g., Internet, Intranet, and Extranet)
Learning Indicator: IS_5.1.9	Access, navigate, and use on-line services (e.g., Internet, Intranet, and Extranet)
Learning Indicator: IS_5.1.10	Send and receive e-mail messages, voice messages, and faxes
Learning Indicator: IS_5.1.11	Identify the basic components of any communications system
Learning Indicator: IS_5.1.12	Transfer files between varying types of computers, both local and remote
Learning Indicator: IS_5.1.13	Communicate between varying computer platforms
<b>IS_5.2</b>	<b>Design, implement, and repair communications and networking systems using cable, fiber optics and/or wireless communications.</b>
Learning Indicator: IS_5.1.14	Identify the types of networks and their features and use
Learning Indicator: IS_5.1.15	Discuss impact of local and wide area networks on delivery of information
Learning Indicator: IS_5.1.16	Provide comparisons of topologies and protocols available for local area networks
Learning Indicator: IS_5.1.17	Install local area network hardware
Learning Indicator: IS_5.1.18	Generate and maintain the operating system
Learning Indicator: IS_5.1.19	Introduce bridges and gateways
Learning Indicator: IS_5.1.20	Select communications software appropriate for specific hardware
Learning Indicator: IS_5.1.21	Evaluate communications software products in terms of their features
Learning Indicator: IS_5.1.22	Install and customize communications software
Learning Indicator: IS_5.1.23	Identify, evaluate, and select telephone systems for various organizational needs
Learning Indicator: IS_5.1.24	Identify business concerns such as procurement, accounting, security, and other concerns

## Information Systems IS\_6: Demonstrate Knowledge of Adaptations for Students with Special Needs

<b>IS_6.2</b>	<b>Select and apply information systems across the curriculum.</b>
Learning Indicator: IS_6.2.1	Demonstrate how information systems can support learning in all curriculum areas
Learning Indicator: IS_6.2.2	Select and apply information systems hardware and software appropriate to accomplish tasks across the curriculum

## Information Systems IS\_7: Demonstrate Knowledge of Information Systems Ethical Issues

<b>IS_7.1</b>	<b>Establish and use a personal code of ethics for information systems use and management.</b>
Learning Indicator: IS_7.1.1	Identify and explain property, privacy, access, and accuracy issues pertaining to information systems
Learning Indicator: IS_7.1.2	Analyze various information systems to distinguish ethical issues and problems
Learning Indicator: IS_7.1.3	Develop a code of ethics for information systems
Learning Indicator: IS_7.1.4	Apply ethical considerations to the operation and management of information systems common to organizations
Learning Indicator: IS_7.1.5	Demonstrate knowledge of laws and statutes relative to use of technology including copyright, equal access, fair use, educational opportunity, and least restrictive learning environment
Learning Indicator: IS_7.1.6	Discuss ethical and human issues relative to the use of technology in schools

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## Information Systems IS\_8: Demonstrate Knowledge of the Social and Economic Impact of Information Systems

### IS\_8.1 Demonstrate a knowledge of the social and economic impact of information systems.

Learning Indicator: IS_8.1.1	Describe how information systems have changed the breadth and level of worker responsibilities
Learning Indicator: IS_8.1.2	Describe how information systems have changed social norms, including worker/manager protocols, and attitudes toward work, family, school, and other cultures
Learning Indicator: IS_8.1.3	Describe how information systems have fostered greater interdependence among workers, organizations, and nations
Learning Indicator: IS_8.1.4	Describe how new developments in information systems affect supply/demand dimensions in the job market
Learning Indicator: IS_8.1.5	Describe how information systems have changed organizational structure
Learning Indicator: IS_8.1.6	Describe how information systems have transformed business processes and relationships
Learning Indicator: IS_8.1.7	Describe how information systems have changed the manner in which training is offered and implemented
Learning Indicator: IS_8.1.8	Explain how information systems have contributed to worker productivity

## Information Systems IS\_9: Demonstrate Knowledge of Computer Architecture

### IS\_9.1 Describe current and emerging computer architecture; configure, install, and upgrade hardware systems; and diagnose and repair hardware problems.

Learning Indicator: IS_9.1.1	Identify hardware components such as hubs, switches and routers
Learning Indicator: IS_9.1.2	Explain the purpose, operation, and care of hardware components
Learning Indicator: IS_9.1.3	Identify examples of emerging hardware technology
Learning Indicator: IS_9.1.4	Diagnose hardware problems
Learning Indicator: IS_9.1.5	Illustrate various configurations of hardware components
Learning Indicator: IS_9.1.6	Describe ergonomic principles in the configuration of computer workstations
Learning Indicator: IS_9.1.7	Remove, upgrade, and install computer hardware
Learning Indicator: IS_9.1.8	Repair computer hardware problems

## Information Systems IS\_10: Demonstrate Knowledge of Operating Systems, Environments, and Utilities

### IS\_10.1 Identify, select, evaluate, use, install, upgrade, customize, diagnose and solve problems with various types of operating systems, environments, and utilities.

Learning Indicator: IS_10.1.1	Describe various types of operating systems, environments, and utilities
Learning Indicator: IS_10.1.2	Describe emerging operating systems technology
Learning Indicator: IS_10.1.3	Perform "start-up" procedures on a computer system
Learning Indicator: IS_10.1.4	Use operating system commands
Learning Indicator: IS_10.1.5	Demonstrate a knowledge of operating systems/languages
Learning Indicator: IS_10.1.6	Prepare flow charts for business applications
Learning Indicator: IS_10.1.7	Import, export, and merge data stored in different formats

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Learning Indicator: IS_10.1.8	Compare and contrast the functions and features of different operating systems, environments, and utilities
Learning Indicator: IS_10.1.9	Select operating systems, environments, and utilities appropriate to specific hardware and software
Learning Indicator: IS_10.1.10	Organize and maintain directories and files using various operating systems
Learning Indicator: IS_10.1.12	Diagnose and repair installation and operational problems of operating systems, environments, and utilities
Learning Indicator: IS_10.1.11	Install operating systems, environments, and utilities

## Information Systems IS\_11: Demonstrate Knowledge of Information Systems Planning, Acquisition, Analysis and Design

**IS\_11.1 Plan the selection and acquisition of information systems; analyze and design information systems using appropriate development tools.**

Learning Indicator: IS_11.1.1	Identify sources for information systems hardware and software
Learning Indicator: IS_11.1.2	Develop design specifications for reports, screens, and data stores
Learning Indicator: IS_11.1.3	Complete appropriate documentation for information systems
Learning Indicator: IS_11.1.4	Identify and describe various structured analysis and design tools
Learning Indicator: IS_11.1.5	Using structured systems analysis tools, analyze the current system
Learning Indicator: IS_11.1.6	Using structured systems analysis tools, define the system requirements
Learning Indicator: IS_11.1.7	Design information systems interfaces appropriate to end-user needs
Learning Indicator: IS_11.1.8	Develop a training plan

## Information Systems IS\_14: Demonstrate Knowledge of Information Systems Careers

**IS\_14.1 Describe positions and career paths in information systems.**

Learning Indicator: IS_14.1.1	Identify positions and career paths in the field of information systems
Learning Indicator: IS_14.1.2	Identify common tasks performed by information systems workers
Learning Indicator: IS_14.1.3	Describe education, experience, skills, and personal requirements for careers in information systems
Learning Indicator: IS_14.1.4	Recognize the impact of technological change on information systems positions and the resulting need for lifelong learning and retraining

## Information Systems IS\_16: Demonstrate Knowledge of Database SQL Programming

**IS\_16.14 Explain Basic Database Systems and the need for Database Security.**

Learning Indicator: IS_16.14.1	Construct and execute a GRANT ON TO [WITH GRANT OPTION] statement to assign privileges to objects in their schema to other users and/or PUBLIC
Learning Indicator: IS_16.14.2	Construct and execute a statement to REVOKE object privileges from other users and/or from PUBLIC
Learning Indicator: IS_16.14.3	Compare the difference between object privileges and system privileges
Learning Indicator: IS_16.14.4	Query the data dictionary to confirm privileges granted
Learning Indicator: IS_16.14.5	Explain the purpose of a database link
Learning Indicator: IS_16.14.6	Apply SQL concepts to create a functional database appropriate for a small business
Learning Indicator: IS_16.14.7	Create table components and layouts using a wizard

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Learning Indicator: IS_16.14.8	Create the application's pages, page style, and popup list of values (LOVs) using a wizard
Learning Indicator: IS_16.14.9	Create input forms using a wizard
Learning Indicator: IS_16.14.10	Input data into the CUSTOMERS, SUBJECTS, PUBLISHERS, and ITEM_TYPES tables using a wizard
Learning Indicator: IS_16.14.11	Define the terms COMMIT, ROLLBACK, and SAVEPOINT as they relate to data transactions
Learning Indicator: IS_16.14.12	List three advantages of the COMMIT, ROLLBACK, and SAVEPOINT statements
Learning Indicator: IS_16.14.13	Explain why it is important, from a business perspective, to be able to control the flow of transaction processing
Learning Indicator: IS_16.14.14	Explain the difference between system security and data security as it relates to a database
Learning Indicator: IS_16.14.15	Provide evidence to support the topic, "Why is it important, from a business perspective, to be able to set up user accounts with different types of access permissions?"
Learning Indicator: IS_16.14.16	List 5 system privileges and explain their functions
Learning Indicator: IS_16.14.17	Write a statement to create a user
Learning Indicator: IS_16.14.18	Write a statement to GRANT privileges such as CREATE SESSION, CREATE TABLE, CREATE SEQUENCE, CREATE VIEW, and CREATE PROCEDURE
Learning Indicator: IS_16.14.19	Define and explain the advantages of a role
Learning Indicator: IS_16.14.20	Define a database link and explain the object privileges that apply with a remote database

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## **Information Systems IS\_17: Demonstrate Knowledge of Advanced Concepts of Database PL/SQL Programming**

### **IS\_17.29 Demonstrate ability to create Procedures.**

Learning Indicator: IS_17.29.1	Differentiate between anonymous blocks and subprograms
Learning Indicator: IS_17.29.2	Identify benefits of subprograms
Learning Indicator: IS_17.29.3	Define a stored procedure.
Learning Indicator: IS_17.29.4	Create a procedure.
Learning Indicator: IS_17.29.5	Describe how a stored procedure is invoked.
Learning Indicator: IS_17.29.6	List the development steps for creating a procedure.

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## **Management Mgmt\_1: Demonstrate Knowledge of Functions of Management**

### **Mgmt\_1.1 Illustrate how the planning function is implemented and explain why it is important.**

Learning Indicator: Mgmt_1.1.1	Explain what planning is and why it is done
Learning Indicator: Mgmt_1.1.2	Demonstrate the ability to set priorities
Learning Indicator: Mgmt_1.1.3	Apply the decision-making process to a business application
Learning Indicator: Mgmt_1.1.4	List the steps in problem solving
Learning Indicator: Mgmt_1.1.5	Define the role of strategic planning in a business
Learning Indicator: Mgmt_1.1.6	Identify factors involved with a strategic plan
Learning Indicator: Mgmt_1.1.7	Describe the process involved in developing a budget
Learning Indicator: Mgmt_1.1.8	Identify tools used in project planning (e.g., PERT, GANTT)

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## Management *Mgmt\_7: Demonstrate Knowledge of General Management skills*

### **Mgmt\_7.2 Describe and use technology as it relates to the management process.**

Learning Indicator: Mgmt\_7.2.1 Describe the role of technology in the overall management process

Learning Indicator: Mgmt\_7.2.2 Use current technology in various facets of the managerial process

### **Mgmt\_7.3 Develop and use networking skills.**

Learning Indicator: Mgmt\_7.3.1 Describe the advantages of networking in order to achieve personal and professional advancement

Learning Indicator: Mgmt\_7.3.2 Identify available resources inside and outside of the school useful for making professional contacts (e.g., career development centers, business schools, alumni, business leaders)

Learning Indicator: Mgmt\_7.3.3 Develop liaisons with community and professional organizations using strategies such as internships, volunteer work, and membership in organizations

Learning Indicator: Mgmt\_7.3.4 Demonstrate a knowledge of professional organizations

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