This course supports the assessments for BDC1. The course covers 7 competencies and represents 9 competency units.

Introduction

Overview

Every business is finding technology use more and more important as an enabler of new ventures and a tool to sustain existing business processes while reducing their expense-to-profit ratio. As a leader of technology, you need a solid understanding of business and IT strategy development to use your technology knowledge and know-how to sustain and enhance your business.

Information systems have become an integral part of business processes. Consider the vast array of software that is used every day, from desktop packages that include word processing, spreadsheets, e-mail, and other groupware to systems that support accounting, finance, human resources, manufacturing, shipping, merchandising, and other key processes that keep a company running. Then, there are the underlying components that enable the systems and users to share information while keeping information secure. As a part of IT management, you may already have a basic knowledge of information technology from your past work experience. This course of study will enable you to fill in the gaps in your knowledge and help you understand how all these systems are related and supportive of business operations.

Competencies

This course provides guidance to help you demonstrate the following 7 competencies:

- Competency 961.1.1: Foundations of Information Technology Skills
  The graduate understands the foundations of information technology skills.
- Competency 961.1.2: Programming Fundamentals
  The graduate understands programming fundamentals.
- Competency 961.1.3: Operating System Fundamentals
  The graduate understands operating systems fundamentals.
- Competency 961.1.4: Systems Analysis Fundamental Skills
  The graduate understands the fundamental skills associated with systems analysis.
- Competency 961.1.5: Database Administration Fundamentals Skills and Knowledge
  The graduate understands the fundamental skills and knowledge required for effective database administration.
- Competency 961.1.6: Information Technology Project Management Skills
  The graduate understands the skills associated with information technology project management.
- Competency 961.1.7: Network Fundamentals Skills
  The graduate understands the fundamentals of networking and skills to maintain networks.

Course Mentor Assistance

As you prepare to successfully demonstrate competency in this subject, remember that course

mentors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course mentors are excited to hear from you and eager to work with you.

Successful students report that working with a course mentor is the key to their success. Course mentors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course mentors act as a support system to guide you through the revision process. You should expect to work with course mentors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course mentors are fully committed to your success!

Preparing for Success

The information in this section is provided to detail the resources available for you to use as you complete this course.

Learning Resources

The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

Automatically Enrolled Resources

You can access the learning resources listed in this section by clicking on the links provided throughout the course. You may be prompted to log in to the WGU student portal to access the resources.

VitalSource E-Texts

The following textbooks are available to you as e-texts within this course. You will be directly linked to the specific readings required within the activities that follow.

- O'Brien, J. A., and Marakas, G. (2009). *Management information systems* (9th ed.). New York: McGraw-Hill Irwin. ISBN: 9780073376769

This textbook has an accompanying website that contains an overview and quizzes for each chapter. You will find the chapter you are studying in the drop down box in the menu on the left. To access the chapter quiz, click on "Chapter Quiz" link in the left menu.

SkillSoft and Books 24x7

You will access SkillSoft items at the activity level within this course. For more information on accessing SkillSoft items, please see the "Accessing SkillSoft Learning Resources" page.

The following Books24x7 e-texts will be used in this course:

- Project Management Institute. (2008). *A guide to the project management body of knowledge* (4th ed). Newtown Square, PA: Project Management Institute, Inc. ISBN:

9781933890517

Note: These e-texts are available to youas part of your program tuition and fees, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.

Other Learning Resources

You will use the following learning resources for this course.

The Business Information Technology Message Board

The Business Information Technology Learning Message Board complements this course and will be the gathering place to communicate with your course mentor and student peers during the next six weeks. You will also be participating in activities throughout this course that will require you to post and comment on selected topics as well as receive assistance as you prepare for the objective assessment.

Foundations of Information Technology Skills and Programming

This section will cover foundations of technology skills. You will be reviewing the basics of technology used in business.

The end users of business applications typically do not understand the complexity that comprises a well-run IT shop. In this section, you will have the opportunity of reviewing the components of the IT shop, many of which you may already be acquainted with.

After completing these activities, you will be able to do the following:

- differentiate between IT industry roles such as programming, analysis, network administration, user support, data administration, etc.
- demonstrate the use of various desktop application products
- determine application program requirements
- define the use of desktop management utilities

Foundations of Information Technology Skills

Companies today use information systems to manage and drive their businesses. In order to understand the varying processes of a business, it is important to know about the underlying and supporting technology. This starts with understanding the basics of IT, the roles and functions in the department, the architecture of medium- to large-scale computer centers, and the infrastructure that must be in place to support the development and operations of hardware and software.

This topic addresses the following competency:

- Competency 961.1.1: Foundations of Information Technology Skills
  The graduate understands the foundations of information technology skills.

Introduction to the Use of IT in Business Today

Read the following chapter in *Management Information Systems*:

- chapter 1 ("Foundations of Information Systems in Business")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- What is a system?
- What are the five areas of information systems knowledge a business professional needs?
- What are three to five major types of information systems?
- What ethical challenges would an IT manager face in the development of and use of information technology for business?

Review of Information Technology Jobs

Access the United States Department of Labor Bureau of Labor Statistics website and view the following pages:

- "Computer and Information Technology Occupations"
- "Computer and Information Systems Managers"

Do you see any roles that may be of interest to you? Write in your journal the description of three or four major IT roles in the following categories:

- Software Development and Programming
- Interactive New Media Development
- Information Technology Services and Support
- Hardware, Telecommunications, and Network Systems
- Marketing and Executive

Succeeding in Business using Information Technology

Read the following chapter in *Management Information Systems*:

- chapter 2 ("Competing with Information Technology")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- Name two or three basic competitive strategies that address the competitive forces faced in a business.

- How can a business gain a competitive advantage through the use of Internet technologies?
- How would an IT system aid in the reengineering of a business process?
- What are knowledge management systems and how are they used?

Message Board Exercise

Consider the following case and questions and post responses to the message board. Comment on the postings of your peers.

- Read the Case 3 ("GE, Dell, Intel, GM and Others: Debating the Competitive Advantage of Information Technology") article at the end of chapter 2 ("Competing with Information Technology"). Notice the quote by Ralph Szygenda, CIO of General Motors, "... IT can be considered a differentiator or a necessary evil." In your place of employment, is IT a differentiator or a necessary evil? If a differentiator, how is IT helping the business succeed? If a necessary evil, what should the head of IT do to better align with business strategy and operations?

Application

Apply your knowledge by answering the following IT Fundamentals questions using your textbook and journal:

1. What is the difference between information systems and information technology?
2. What is the role of IS in businesses today?
   a. Describe the 5 phases as outlined in Figure 1.4.
3. What are operations support systems?
4. Describe the difference between intranet and extranet systems.
5. Is a "decision support system" a "management information system"? Why or why not?
6. How is a business systems analyst different than a systems analyst?
7. What would a network administrator be responsible for?
8. How would a programmer (i.e. systems engineer, developer) work with a business system analyst?
9. Who is responsible for maintaining connection from the company computers to the Internet?
10. Why should the business view IT systems strategically?
11. What is an example of a strategic IT system?
12. Explain Porter's five competitive forces model.
    a. Give an example of a system that would erect barriers to entry.
    b. Give an example of a system that would increase costs to the customer to switch suppliers.
13. What is a good example of an agile company?
14. What is a virtual company?
15. Describe a knowledge management system.

Having trouble answering the questions? Use the message board to elicit help from your course mentor and peers.

Operating Systems and Systems Analysis Fundamentals

Operating systems are the core software that enable computers to run the application programs. Systems analysis is the job of the system analyst, who maintains the computers, disc drives, and other computer hardware, and the connection between them and the outside (networks). It is important that you have a good grasp on how it all works in order to understand basic limitations and opportunities afforded by computer technology.

After completing these activities, you will be able to do the following:

- define network access methods, topologies, and protocols
- describe the features of various server systems (e.g., UNIX, NT, and Novell)
- describe basic network administration skills
- describe the reason to optimize application system performance

Operating Systems and Systems Analysis

The very basis of computing systems is the hardware, software, and networks. All of these parts help define the infrastructure of an information technology department.

This topic addresses the following competencies:

- Competency 961.1.3: Operating System Fundamentals
  The graduate understands operating systems fundamentals.
- Competency 961.1.4: Systems Analysis Fundamental Skills
  The graduate understands the fundamental skills associated with systems analysis.

Computer Infrastructure Inventory

Ask a systems analyst in your place of work if they have an inventory of the company's infrastructure. See if you recognize each component; check in your textbook and online for those you do not recognize. Write down your descriptions in your journal. Have you discovered something unique? Share what you have discovered on the message board.

Computer Hardware

Read the following in *Management Information Systems*:

- chapter 3 ("Computer Hardware")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- Identify the major types and uses of microcomputers, midrange, mainframe, and server computer systems.
- Identify the major peripherals for input, output, and storage.
- Define the key components and functions of a computer system.

Computer Software

Read the following in *Management Information Systems*:

- chapter 4 ("Computer Software")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- What are the important trends occurring in computer software?
- Give two or three examples of systems and application software.
- Identify several desktop applications and collaborating software.
- Define the main use of computer programming software.

Network Administrator

Read the following job description from StateUniversity.com:

- Network Administrator Job Description

Answer the following questions in your journal:

- How is a network administrator's job different from a systems analyst's job?
- How do network administrators and systems analysts interact?

Client Server Architecture

Read the following web page from CIO:

- Enterprise Architect

Answer the following question in your journal:

- How would an enterprise architect be different than an architect that specializes in client servers?

Message Board Exercise

Review the following in *Management Information Systems*:

- table 4.17 ("Comparing System Software Offered by IBM and Its Main Competitors") on page 150 of chapter 4 ("Computer Software")

Look at your employer's IT infrastructure list. Post your response and read your peers' responses to the following questions:

- Which network management system do you have?

- What database manager is used?
- Can you identify and list the collaboration tools?
- What kinds of development tools are being used?

Application

Apply your knowledge by answering the following hardware and software questions using your textbook and journal:

1. What is a network computer? How is it different from a desktop PC?
2. What is a server? Are all servers' mid-range computers? Explain.
3. Storage devices measure their capacity in what?
4. What is the difference between applications software and systems software?
5. Give an example of a software suite. What applications would normally be included?
6. What is a web browser? Give an example.
7. Define IM and Blog. How are they similar? How are they different?
8. What is an ASP (Application Service Provider)?
9. Define an operating system. Compare several operating systems that run on desktop PC's or servers.
10. What is the difference between multitasking and multiprocessing?
11. Define each of the following systems software categories:
    a. Network Management
    b. Application Server
    c. Database Manager
    d. Collaboration Tools
    e. Development Tools
12. Why would a systems analyst ask an application developer to rewrite code to optimize system performance?
13. What would a programmer use HTML, XML, and Java languages to do?
14. What is Microsoft's .Net?
15. What is a web service?

Can you answer the questions? Do not hesitate to ask for help from the course mentor using the message board.

Database Administration Fundamentals

This section focuses on the basics of the file system that houses all the company's data. Business analysts and senior management use data in databases to create summary and exception types of queries and reports. These are used to discover business opportunities and problems. Therefore, the data must be accurate and stored in such a way that it is easy and quick to access for summaries and details. This is the art of database management.

After completing these activities, you will be able to do the following:

- collect and analyze customer application integration requirements (database management, web-based programming)

- define the importance of a normalized database
- explain the importance of database tuning
- explain the importance of database maintenance
- compare and contrast the relationship between database administration (DBA) and the application developer
- explain the role of database security administration
- demonstrate ability to extract data using various strategies
- prepare reports using extracted data
- differentiate between database transaction management and currency control (how many can have access at the same time)
- explain the importance of backups for databases

Database Administration Fundamentals

It all starts with transactional data (sales, customer name and address, employee ID, purchase order data, invoices, etc.). Data is collected and added to a file. The files are then read by software called a database management system (DBMS) and stored in a database that was defined and built by a database administrator (DBA). The database management system software enables business analysts to access the data to create reports. The DBA uses the reports to build, alter, and maintain the various components of the database. This section explores the database administrator's role.

This topic addresses the following competencies:

- Competency 961.1.5: Database Administration Fundamentals Skills and Knowledge
  The graduate understands the fundamental skills and knowledge required for effective database administration.

Data Resources Management

Read the following in *Management Information Systems*:

- chapter 5 ("Data Resources Management")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- Explain the business value of implementing data resource management processes and technologies.
- Explain the difference between file processing and database management.
- How is a database different from a data warehouse?
- How would a finance analyst use a database system?

Overview of a Database Design and Database System

Complete the following SkillSoft modules:

- 78565_eng: An Overview of Database Design
- 80740_eng: An Introduction to Database Systems

After completing these modules, respond to the following in your journal:

- Define and discuss the purpose of database design.
- Describe the three-schema database architecture and the database design life cycle.
- Differentiate between a database and a DBMS.
- Identify the requirements of a good database.
- Examine an example of a good database system.
- Describe the evolution of database models.
- Describe the structure and evolution of database architectures.
- Design a database.
- Differentiate between data warehousing and OLAP.

Database Normalization

Read the following web page:

- "Database Normalization Basics"

Answer the following questions in your journal:

- What is meant by "third normal form"?
- Would this be a good way to store data for a database to be used for querying?

Database Security

Read the following in *Management Information Systems*:

- chapter 13 ("Security and Ethical Challenges")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following statements in your journal:

- Identify several ethical issues regarding the use of data.
- List several types of security management strategies.

Application

Now that you have completed your studies for database administration fundamentals, use your textbook and journal to answer these study questions:

1. Describe a database and the following database structures:
   a. Hierarchical structure
   b. Network structure
   c. Relational structure

   d. Multidimensional structure
   e. Object-oriented structure
2. Which structure would you use to build the following systems?
   a. CAD system
   b. OLAP system
   c. Data Warehouse system
3. Which structure is most widely used?
4. A DBA uses a data dictionary to do what? What is the data in a data dictionary called?
5. What is an entity relationship?
6. What is the difference between logical views and physical views in a data model?
7. Is data resource management the same as database management?
8. What is the advantage of a distributed database?
9. Data mining is a term used to explain what function?
10. Who would do data mining? With what tools?
11. What is data redundancy? How is this managed by normalizing a database?
12. What would a DBA use a DBMS system to do?
13. How would a programmer (i.e., developer) interact with a DBA?
14. What tasks can be performed using SQL?
15. What maintenance would a DBA do on a database? Why?
16. What is database tuning? Why would a DBA tune a database?
17. How does good database design enable acceptable database performance?
18. What is physical data independence and logical data independence?
19. Do you use a DBMS to do backups? To provide security? To enforce integrity restraints?
20. A _____ contains the information about a database? (data mart, catalog, or a DBMS)
21. What is a distributed database environment?

There is quite a bit of information discussed in this topic. Do you have any questions or hanging uncertainties about the material? If so, please ask questions on the message board under this topic. The course mentor will help you get the answers you need.

IT Project Management

In this section, you will be exploring the tools and processes that make up IT project management.

The *PMBOK Guide* describes a project as "a temporary endeavor undertaken to create a unique product, service or result" (*A Guide to the Project Management Body of Knowledge*, 2004). However, information technology project management is the science of managing a one-time effort to build, alter, and/or install a software application system. Project management involves processes, tools, techniques, and areas of knowledge that will enable a project manager to successfully manage a project, keep on time, and stay on budget, with an emphasis to meet the needs of the customer.

When completing this subject, you will be able to do the following:

- define systems' development life cycles

- define the scope of an information technology project
- identify stakeholders and decision makers for an information technology project
- develop a detailed task list for an information technology project (who is responsible for specific tasks?)
- estimate time requirements for an information technology project
- develop an initial information technology project management flowchart
- identify and secure required resources
- evaluate project requirements
- identify and evaluate information technology project management risks
- prepare an information technology project management contingency plan
- identify interdependencies and the impact they have on the information technology project and overall operations
- identify and track critical milestones
- participate in an information technology project phase review
- manage the implementation of new policies and procedures that result from an information technology project
- report information technology project status
- schedule the changes resulting from an information technology project according to risk
- discuss support procedures and change implementation regarding information technology projects
- verify correct and accurate operation at the conclusion of the project

Information Technology Project Management

An information technology project is different from a business project in some ways; however, the basic elements of management and tracking are the same. This is an important part of your information technology management skill set, and you should understand these concepts and methods well. If you are interested in this aspect of IT management, you should explore obtaining a PMP certificate (available outside of WGU).

This topic addresses the following competencies:

- Competency 961.1.2: Programming Fundamentals
  The graduate understands programming fundamentals.
- Competency 961.1.6: Information Technology Project Management Skills
  The graduate understands the skills associated with information technology project management.

SkillSoft Exercises

Complete the following in SkillSoft modules:

- PROJ0351: Introduction to IT Project Management
- PROJ0352: Functions of IT Project Managers
- PROJ0353: The Life Cycle of an IT Project
- PROJ0354: Managing the Execution and Control of IT Projects
- PROJ0355: Managing Efficiencies of IT Projects

After completing these modules, respond to the following in your journal:

- Define a project. Define a project manager's role.
- Describe the process of project management.
- Describe the life cycle phases of project management.
- Explain the roles of a project charter and a project scope document.
- Describe Gantt and PERT charts and resources for a project.
- Explain the role of the project sponsor.
- Use risk management tools to mitigate project risks.

Developing Business and IT Solutions

Read the following in *Management Information Systems*:

- chapter 12 ("Developing Business/IT Solutions")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- Describe the systems development process.
- Explain the basics of project management.
- What role does programming play in the implementation of systems?
- Identify the activities involved in the implementation of a new information system.
- Compare the four different types of conversion strategies.

Message Board Exercise

Locate the "IT Project Management" discussion thread on the message board. The text defines the systems development life cycle as (1) investigation, (2) analysis, (3) design, (4) implementation, and (5) maintenance. Is the textbook definition a good definition of a project management process? If so, why, and what (if anything) is missing? If not, what would be the basic processes in a project management methodology?

Post your thoughts in the discussion thread and read what your peers have written. Ask questions if you need clarification.

Information Technology Project Management (Part II)

In this section, you will be reviewing PMI's latest body of knowledge on project management. This body of knowledge is the de facto standard for the project management profession.

This topic addresses the following competencies:

- Competency 961.1.2: Programming Fundamentals
  The graduate understands programming fundamentals.
- Competency 961.1.6: Information Technology Project Management Skills
  The graduate understands the skills associated with information technology project

management.

Books24x7 Exercise

Read the following chapters in A Guide to the Project Management Body of Knowledge from Books24x7:

- chapter 1 ("Introduction")
- chapter 2 ("Project Life Cycle and Organization")
- chapter 3 ("Project Management Processes for a Project")

Respond to the following in your journal:

- What is a project?
- What is the role of the project manager?
- What is project management?
- How are projects and strategic planning connected?
- What is the difference between project work and operations work?
- What are three types of project organizational structures?
- What is a project management process group?

SkillSoft Exercise

Complete the following SkillSoft modules:

- PROJ0581: Communications Planning and Information Distribution
- PROJ0582: Performance Reporting and Stakeholder Management
- PROJ0365: Managing Multiple IT Projects

After completing these modules, respond to the following in your journal:

- Identify the benefits and processes of project communications management.
- Identify the benefits of effective communication in managing a project.
- Apply techniques to improve communications in a given business scenario.
- Explain the value of communications planning.
- Identify the benefits of understanding the information distribution process.
- What are the sequence examples of the steps to organizing a portfolio of IT projects?
- Explain the benefits of practicing enterprise IT project management.

Application

Apply your knowledge by answering the following study questions on IT project management using your textbook and journal:

1. What are the advantages of using a project management approach to completing a project?
2. What is the difference between project management and a project plan?
3. What is systems development life cycle?
4. Describe the difference between intangible and tangible costs.

   a. How are these used when doing a cost/benefit analysis?
5. What is systems analysis?
6. What is meant by a joint application design session?
7. What is "as-is analysis" and why do it?
8. How does a business systems analyst develop functional requirements?
   a. Name different types of functional requirements (see Table 10.7).
9. Systems design consists of three parts. Name the following:
   a. Screen, form, report, and dialog design
   b. Data element structure design
   c. Program and procedure design
10. What are the benefits and the drawbacks of prototyping?
11. What is a project? What are the phases of a project?
12. What kinds of hardware factors would you need to evaluate for a project?
13. What kinds of software factors would you need to evaluate for a project?
14. Who is responsible for unit testing, interface testing, and user acceptance testing?
15. Who is responsible for training?
16. There are four ways to implement a new system (convert). Describe them:
    a. Direct
    b. Parallel
    c. Pilot
    d. Phased
17. Why is a post implementation review important? Who should attend?
18. Define the following roles as they relate to a project:
    a. Project sponsor
    b. Project manager
    c. Business systems analyst
    d. Systems analyst
    e. DBA
19. How are changes suggested by users during a project managed?
20. What are risks to a project? How should risks be managed?
21. Who would attend a project status meeting and how often would you have them?
22. What should a project manager present in an update meeting?
23. How often would a project manager meet with their project team?
24. How would a project manager ensure resources would be available when needed?
25. What is the critical path method?
26. What is a Gantt chart? A PERT chart? What is the difference between the two?

Do not forget to use the message board if you have questions or want to share an insight from your studies.

Network Fundamental Skills

How familiar are you with the many and varied types of technology-based networks? This is your opportunity to learn all about networks.

After completing the activities, you will be able to do the following:

- describe various levels of network configurations (local, metropolitan, wide area) and give examples of specific implementations of each
- describe client/server application integrations
- define the factors that impact network performance
- define elements of network security and authentication
- explain the relationship of network access methods, topologies, and protocols

Network Fundamentals Skills

Networking is the process of connecting large mainframe servers to other servers and components to workstations and individual computers to the Internet. It is the process of connecting people to businesses, businesses to their suppliers and competitors. It involves many different specializations: local area networks, wide area networks, wireless networks, and all the hardware and software that make this all work.

This topic addresses the following competencies:

- Competency 961.1.7: Network Fundamentals Skills
  The graduate understands the fundamentals of networking and skills to maintain networks.

Overview of IT Networks

Read the following website for a good basic overview of network fundamentals:

- The TCP/IP Guide

After reading the article, respond to the following in your journal:

- What is this author's description of networking?
- What are the eight advantages associated with networking?
- What are the five disadvantages associated with networking?

Telecommunications and Networks

Read the following in *Management Information Systems*:

- chapter 6 ("Telecommunications and Networks")

On the textbook website, review the chapter summary and take the online quiz. Take notes on the quiz questions you get wrong, and look up the correct responses in your textbook.

After reading the chapter, respond to the following in your journal:

- Explain the concept of a network.
- Provide examples of the business value of Intranet, Internet, and extranet applications.
- Explain the functions of major components of telecommunications network hardware, software, media, and services.
- Explain the concept of client/server networking.

- Explain the concept behind TCP/IP.
- Can you outline the seven layers of the OSI network model? What are they?

SkillSoft Exercises

Complete the following SkillSoft modules:

- 72111_eng: Introduction to Telecommunications
- 218678_eng: The Fundamentals of Networking
- 218759_eng: WANs and Remote Connectivity
- 218763_eng: Network Operating Systems and Clients

After completing these modules, respond to the following in your journal:

- Discuss the capability and range of services in the telecommunications arena.
- Describe communications services and components required to meet business needs.
- Describe different methods of sending voice and data between locations.
- Distinguish between the main types of networks.
- Distinguish between common network categorizations.
- Match network devices to their functions.
- Identify the features and functions of major WAN connection technologies.
- Explain the features and architecture of Novell Netware.
- Define the functions and features of UNIX and Linux operating systems.
- Identify the key features and functionality of Windows NT and Windows 2000.

Application

Apply your knowledge by answering the study questions on network management using your textbook:

1. Define open systems.
2. Define middleware. Why is this important in telecommunications?
3. What role does an intranet play in business today? The Internet?
4. A communications network is any arrangement where a sender transmits a message to a receiver over a channel consisting of some type of medium. Name examples of a channel and a medium.
5. Name three types of telecommunications networks.
6. Why do organizations use a VPN?
7. What is a client/server network? Why is this replacing legacy systems?
8. Give an example of an analog signal and of a digital signal.
9. What would a company use fiber optic cabling for?
10. What does latency mean in regards to satellite communications?
11. Managing a network includes traffic, security, network monitoring and what (p 218)?
12. What is the OSI model? How does it compare to the TCP/IP protocol?
13. Bandwidth is important in what way when leasing a network?
14. Why use ATM over Frame Relay? (p. 225)
15. Describe network interoperability.
16. Define a CRM system, an ERP system and a SCM application.

17. Which department in a business would use a CRM system?
18. What is the benefit of using an ERP system, what is the downside?
19. Why do companies use Enterprise Application Integration software?
20. Describe business ethics. How is the use of technology tied to business ethics?
21. Is computer monitoring in a workplace legal?
22. What is encryption?
23. What is a firewall, and why would a company use one?
24. How do backup files help with IT security?
25. What is meant by disaster recovery?
26. What is a fault tolerant system?

Do not forget to use the message board if you have questions or want to share an insight from your studies.

Final Steps

Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.

The WGU Library

The WGU Library is available online to WGU students 24 hours a day.

For more information about using the WGU Library, view the following videos on The WGU Channel:

- WGU: Accessing the Library
- WGU Library: Finding Articles, Books, & E-Reserves

Center for Writing Excellence: The WGU Writing Center

If you need help with any part of the writing or revision process, contact the Center for Writing Excellence (CWE). Whatever your needs—writing anxiety, grammar, general college writing concerns, or even ESL language-related writing issues—the CWE is available to help you. The CWE offers personalized individual sessions and weekly group webinars. For an appointment, please e-mail writingcenter@wgu.edu.

Feedback

WGU values your input! If you have comments, concerns, or suggestions for improvement of this course, please submit your feedback using the following form:

- Course Feedback

ADA Policy

Western Governors University recognizes and fulfills its obligations under the Americans with

Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973 and similar state laws. Western Governors University is committed to provide reasonable accommodation(s) to qualified disabled learners in University programs and activities as is required by applicable law(s). ADA Support Services serves as the principal point of contact for students seeking accommodations and can be contacted at ADASupport@wgu.edu. Further information on WGU?s ADA policy and process can be viewed in the student handbook at the following link:

- Policies and Procedures for Students with Disabilities