

# Information Technology Management (BIT1)

Course of Study for BIT1

## Description

This course of study outlines the sequence of learning activities to help you demonstrate competence in the subject area of *Information Technology Management* (BIT1). Your competency in the subject matter will be assessed via an objective exam. Depending on your educational background and work experience, this course of study can take up to seven weeks. Following this document sequentially is an important part of your assessment preparation. This tool is also designed to help you become an independent learner by providing multiple learning methods. These steps may be completed more quickly than shown below as determined in consultation with your mentor.

## Introduction

*Welcome to the Information Technology Management Course of Study! Every business is finding it more and more important to use technology as an enabler of new ventures, as well as, a tool to sustain existing business processes while reducing their expense to profit ratio. As a leader of technology, you want to be prepared with a solid understanding of business and IT strategy development, as well as, be able to use your technology knowledge and know-how to sustain and enhance your business – which is just what we are going to explore. My name is Diane Colum and I will serve as your Academic Mentor as you work with this Course of Study in preparation for the BIT1 Performance Assessment. My experience includes executive IT positions for several large companies over the past 30 years, including serving as VP of IT for the last five years of my IT career. I have been teaching online for the past three years. I am here to support your learning through this Course of Study and look forward to working with you.*



*I am available to answer questions, provide guidance, and help solve problems so do not hesitate to contact me during office hours, which are usually Monday and Thursday from 9 am – 9 pm, Tuesday 9 am to 5 PM and Wednesday and Friday 9 am – noon EST (or by appointment).*

*Email: [dcolum@wgu.edu](mailto:dcolum@wgu.edu)*

*Telephone: 866 895 9660 x2050*

## **Why Study Information Systems?**

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, email and other groupware to systems that support accounting, finance, human resources, manufacturing, shipping, merchandising and other key processes that keep a company running. Then, of course, 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 understand how all these systems are related and supportive of the business.

This Course of Study is designed to prepare you for the BIT1 proctored objective exam. This exam consists of 68 multiple-choice questions with a pass score of 54%. There are seven sub-domains of study within the Information Technology Management exam including:

- Foundations of Information Technology Skills
- Programming Fundamentals
- Operating System Fundamentals
- Systems Analysis Fundamental Skills
- Database Administration Fundamental Skills and Knowledge
- Information Technology Project Management Skills
- Network Fundamentals Skills

The exam must be taken at an approved testing site. There is also a pre-assessment (PABI) that is available to help students prepare for the exam. The pre-assessment has a pass score of 52% will help the student to understand those key areas that should be focused on to better insure success with the assessment exam.

Each of you has obtained some level of Information Technology knowledge, either through textbooks and/or through personal experience. You have also experienced how fast technology changes. Reading periodicals and magazines, accessing Information Technology news websites is an excellent way to stay abreast of new offerings. It is important to keep current so that you can correctly interpret whether the new tools/software will fit with your company's infrastructure and interface with existing modules. In this Course of Study, we will be exploring the basics as well as looking at how systems support business processes. You may find some new and interesting ideas that you can take back with you to use in your place of employment.

**Please note:** This Course of Study is a dynamic document that is updated on a regular basis. As you work through the Course of Study, make certain you check to make sure you are using the most current version of the document found by clicking on the "Start Here" button on the AAP Learning Resource.

## **Competencies**

There are eight major academic competencies associated with this course of study:

### **Competency BIT1 1 – Foundations of Information Technology Skills**

*The graduate understands the foundations of Information Technology Skills*

### **Competency BIT1 2 – Programming Fundamentals**

*The graduate understands programming fundamentals*

### **Competency BIT1 3 – Operating System Fundamentals**

*The graduate understands operating systems fundamentals*

### **Competency BIT1 4 – Systems Analysis Fundamental Skills**

*The graduate understands the fundamental skills associated with systems analysis.*

### **Competency BIT1 5 – Database Administration Fundamentals Skills and Knowledge**

*The graduate understands the fundamental skills and knowledge required for effective database administration*

## Competency BIT1 6 – Information Technology Project Management Skills

*The graduate understands the skills associated with Information Technology Project Management*

## Competency BIT1 7 – Network Fundamentals Skills

*The graduate understands the fundamentals of networking and skills to maintain networks.*

### Required Learning Resources:

1. **Textbook:** O'Brien, J. A., and Marakas, G. (2009). *Management information systems* (9th ed.). New York: McGraw-Hill Irwin ISBN: 978-0-07-337676-9
2. **SkillSoft /Skillport Library:** You can login to your SkillSoft library by clicking on: <http://wgu.skillport.com>
3. **Business Information Technology Learning Community:** You can login by clicking on the following URL:  
[http://community.wgu.edu/clearspacex/community/business\\_information\\_technology\\_learning\\_community](http://community.wgu.edu/clearspacex/community/business_information_technology_learning_community).
4. **Journal**

## WEEK 1

### Preparing for Success

In order to successfully complete BIT1 you need the appropriate resources to support your learning. The various Learning Resources included in this COS are essential of your success, as they will provide the necessary knowledge to pass the BIT1 objective exam.

After completing this week's activities, you should have:

- Purchased your textbook
- Logged in to the Business Information Technology Learning Community and posted an introduction.
- Logged into SkillSoft
- Secured a journal for your Business Information Technology study notes

### Topic: Acquire Learning Resources

Arrange to obtain or enroll in the learning resources listed below so there will be no delays in your studies. These items are essential for you as the COS will guide you week-by-week in the use of these resources

- **Activity: Order the Textbook**

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

This textbook has an accompanying website that contains overview and quizzes for each chapter. The URL is: [http://highered.mcgraw-hill.com/sites/0073376760/student\\_view0/](http://highered.mcgraw-hill.com/sites/0073376760/student_view0/)

To access the overview, 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 in the left menu.

This textbook includes chapter questions, online textbook quizzes, overviews, and additional reading material. *The WGU Bookstore has this book available for immediate purchase and delivery. You may shop at other online bookstores, but be sure to order early and use the correct ISBN to get the correct edition.*

- **Activity: Purchase a journal**

Throughout this course of study, you will be asked to answer questions or, perhaps, there are ideas or tools that jumped out at you. Ideas that you can find immediate relevance or application for in your professional life; or that can be used to improve your skills in leadership. Writing down the concepts will make it easier to apply them in your professional life. This journal or toolbox can also help to refresh your memory on concepts that will be included in the BIT1 exam. Whether you purchase a notebook or create a Word document, it will become a valuable toolbox you can add to and draw upon throughout your MBA journey and beyond.

### **Topic: Login to SkillSoft**

Throughout the next seven weeks, you will have the opportunity to use SkillSoft courses, simulations, books, SkillBriefs and Job Aids to enhance your understanding of various leadership topics. The following activities will confirm that you have access to SkillSoft and give you an opportunity to get a feel for the SkillSoft learning environment.

- **Activity: Login to SkillSoft**

Use the instructions you received from SkillSoft to login to SkillSoft. Notify your mentor that you were able to successfully login. If you were unable to do so, ask your mentor for assistance. You can access your SkillSoft library by clicking on: <http://wgu.skillport.com>.

- **Activity: Navigating in SkillSoft**

Take some time to become acquainted with the SkillSoft learning environment. Search for information on Leadership. Were you able to find books, courses, simulations, SkillBriefs, and job aids from this search? If you have questions on how to navigate in SkillSoft ask your mentor for assistance.

- **Activity: Set up study plan in SkillSoft**

The SkillSoft Library contains several modules that will assist you in preparing for the assessment – these are listed below, and are also included in Weeks 4 through 7. New students are automatically enrolled in SkillSoft during EWB. All students will use their WGU student portal login and password to access SkillSoft.

For additional information on using your SkillSoft account, read the “Using Your SkillSoft Account” document at:

[https://web5.wgu.edu/aap/content/Using%20the%20SkillSoft%20Library%20\(2\).doc](https://web5.wgu.edu/aap/content/Using%20the%20SkillSoft%20Library%20(2).doc)

**Logging on to SkillSoft:** Log into SkillSoft and access the following modules, which are listed in this Course of Study (COS):

**SkillSoft Modules List:**

78565\_eng – An overview of Database Design  
80740\_eng- An Introduction to Database Systems  
PROJ0351 – Introduction to IT Project Management  
PROJ0352 – Functions of IT Project Manager  
PROJ0353 – The Life Cycle of an IT Project  
PROJ0354 – Managing the Execution and Control of IT Projects  
PROJ0355 – Managing Efficiencies of IT Projects  
PROJ0581 – Communications Planning and Information Distribution  
PROJ0582 – Performance Reporting and Stakeholder Management  
PROJ0365 – Managing Multiple IT Projects  
72111-eng – Introduction to Telecommunications  
110726\_eng – An Introduction to WAN technologies  
218759\_eng – WANS and remote connectivity  
218763\_eng – Network Operating Systems and Clients

1. Log into SkillSoft: <http://wgu.skillport.com>
2. Enter the module number listed in the various sections of this GLT in the “search for” box.
3. Click on the course
4. Read the SkillSoft Lesson overview.
5. Take the SkillSoft course pre-test for each section where available.
6. Complete the modules where your pre-test scores are low.
7. Take the post-tests after completing all of the modules.
8. For additional information, review the SkillBriefs, Job Aids and Books 24/7 associated with each module.

**Topic: Login to the Business Information Technology Community**

The Business Information Technology Learning Community complements this course of study and will be the gathering place to communicate with your faculty leader and student peers during the next seven weeks. You will also be participating in activities throughout this course of study that will require you to post and comment on selected topics as well as receive assistance as you prepare for the objective exam. Complete the following activities to become better acquainted with the learning community.

- **Activity: Login to the Business Information Technology Learning Community**

Login to the Business Information Technology Learning Community. You can do this by selecting the community link in the upper right hand corner of your AAP or by selecting the following URL:

[http://community.wgu.edu/clearspacex/community/business\\_information\\_technology\\_learning\\_community](http://community.wgu.edu/clearspacex/community/business_information_technology_learning_community). Take this time to become acquainted with the learning community.

Notice that there are announcements to keep you apprised and up-to-date on community events. There are tabs where the faculty leader has posted documents, discussion threads and blogs. From time to time, you will be asked to post to a specific activity. For this activity post to the discussion thread, “Introduce Yourself!” Take this time to respond to other student peers who have also posted.

- **Activity: Connect to a Virtual Study Group**

Many students have found it beneficial to use the community to form or join a virtual study group. Locate the discussion thread “Join a Virtual Study Group.” Use this

discussion thread to organize or join an informal study group that is managed by your student peers. The faculty leader will not be involved in organizing or coordinating study group activities.

- **Activity: Familiarize yourself with Community Netiquette**

In community announcements, there is a short set of netiquette rules that should be followed in order to participate in the community. Students who do not conform to the rules will not be allowed to participate in the community. Please familiarize yourself with these rules and contact your mentor or the community faculty leader if you have any questions.

## Week 2

### Foundations of Information Technology Skills and Programming

This section will help you prepare for the Foundations of Technology Skills section of the BIT1 objective exam. You will be reading the required textbook and reviewing the basics of technology used in businesses.

#### **Background Information:**

Your textbook has a great model of the framework of IT systems. The five major groups are Management Challenges, Information Technologies, Foundations and Concepts, Development Processes and Business Applications. The end users of business applications probably have no idea of the complexity that comprises a well run IT shop. As a member of an IT organization, you may have some idea of the pieces and parts. In this section, you will have the opportunity of reviewing areas you already are familiar with and learning new.

After completing this week's activities, you will be able to:

- Differentiate between the roles of various computer careers in the information technology industry, programmer, analyst, 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

#### **Competency BIT1 1 – Foundations of Information Technology Skills**

*The graduate understands the foundations of Information Technology Skills*

#### **Topic: Foundations of Information Technology Skills**

Companies today use Information Systems to manage and drive their business. 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 a medium to large computer centers and the infrastructure that needs to be assembled with new software and hardware.

Your study of the Foundations of Information Technology Skills includes resources from your textbook, online web sites and the Business Information Technology Learning Community. Be sure to utilize each of these resources as they provide a broad range of viewpoints on the topics you will need to master in order to pass the BIT1 objective assessment.

- **Activity: Introduction to the use of IT in business today**

Read Chapter 1 – “Foundations of Information Systems in Business” in *Management information systems*. Access this textbook’s 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, write the answers to the following questions in your journal:

- What is a system?
- What are the five areas of information systems knowledge does a business professional need?
- 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?

- **Activity: Review of Information Technology Jobs**

Access an IT Career Website at:

[http://www.mesda.com/career\\_sectors\\_jobdesc.aspx#specialist](http://www.mesda.com/career_sectors_jobdesc.aspx#specialist)

Review this list of jobs. It is quite expansive. There may be many new job titles and roles that you are not familiar with. 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

- **Activity: Succeeding in Business using Information Technology**

Read Chapter 2 – “Competing with Information Technology” in *Management information systems*. Access this textbook’s 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, write the answers to the following questions in your journal:

- Name two to 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 re-engineering of a business’ processes
- What are knowledge management systems and how are they used?

- **Activity: Community Exercise**

To learn information you need to do more than just read about it in a textbook. You need to transform the thoughts and ideas into language that makes sense for you. You need to assimilate the information or make it your own.

Visit the Business Information Technology Learning Community. Look for the discussion thread titled BIT1 – IT Fundamentals. Post your response and read your peers responses to the following question:

Read the Case 3 article at the end of Chapter 2, “GE, Dell, Intel, GM and Others: Debating the Competitive Advantage of Information Technology”. Notice the quote by Ralph Szygenda, CIO of General Motors, “... IT can be considered a differentiator or a necessary evil” (O'Brien & Marakas, 2009, p. 69). 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 the business?

- **Activity: Application**

Now that you have completed your studies for the Foundation of Information Technology Skills, it is important to see if you can apply your knowledge by answering the IT Fundamentals questions. Use your textbook and journal to answer these study questions. These questions are located in Appendix A of this Course of Study.

If you have problems answering any of the questions, visit the Business Information Technology Learning Community and pose your questions either in a Discussion Thread or directly to the community's mentor.

## WEEK 3

### Operating Systems and Systems Analysis Fundamentals

This section will help you prepare for the operating systems and systems analysis section of the BIT1 objective exam. You will be reading from your textbook as well as accessing website with more information.

#### Background Information:

Operating Systems are the core software that enables computers to run the application programs. Systems Analysis is the job of System Analysts who maintain 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 this week's activities, you will be able to:

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

#### Competency BIT1 3 – Operating System Fundamentals

*The graduate understands operating systems fundamentals*

#### Competency BIT1 4 – Systems Analysis Fundamental Skills

*The graduate understands the fundamental skills associated with systems analysis*

#### Topic: Operating Systems and Systems Analysis

The very basis of computing systems is the hardware (computers, disk drives, modems, desktops, etc), the software (application programs, system operating systems (Windows NT,



UNIX, etc), network operating systems, etc) and networks. All of these parts are called the infrastructure of an Information Technology department.

You will be reading about these basic elements of computer systems in your textbook. 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.

- **Activity: Computer Hardware**

Read Chapter 3 – “Computer Hardware” in *Management information systems*. Access this textbook's website and 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, write the answers to the following questions in your journal:

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

- **Activity: Computer Software**

Read Chapter 4 – “Computer Software” in *Management information systems*. Access this textbook's website and 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, write the answers to the following questions 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

- **Activity: Network Administrator**

Access the following website. It has a good description of a Network Administrator's Job at: <http://careers.stateuniversity.com/pages/218/Network-Administrator.html>  
Answer the following questions in your journal:

- How is a network administrator's job different from a system's analyst's job?
- How do they interact?

- **Activity: Client Server Architecture:**

Access the following website that has a good description of a Network Administrator's Job at: [http://www.cio.com/article/127751/Enterprise\\_Architect](http://www.cio.com/article/127751/Enterprise_Architect)  
Answer the following question in your journal:

- This article describes an enterprise architect. How would this be different than an architect that specializes in Client Servers?

- **Activity: Community Exercise**

To learn information you need to do more than just read about it in a textbook. You need to transform the thoughts and ideas into language that makes sense for you. You need to assimilate the information or make it your own.

Visit the Business Information Technology Learning Community. Look for the discussion thread titled BIT1 – Software/Hardware. Post your response and read your peers responses to the following question:

Review the table 4.17 on pg 150 in your textbook titled Comparing System Software Offered by IBM and Its Main Competitors. Looking at your place of employment's infrastructure list, which network management system do you have? What database manager is used? What collaboration tools? What development tools?

- **Activity: Application**

Now that you have completed your studies for the Operating Systems and Systems Analysis, it is important to see if you can apply your knowledge by answering the Hardware and Software questions. Use your textbook and journal to answer these study questions. These questions are located in Appendix A of this Course of Study.

If you have problems answering any of the questions, visit the Business Information Technology Learning Community and pose your questions either in a Discussion Thread or directly to the community's mentor.

## WEEK 4

### Database Administration Fundamentals

This section focuses on the basics of the file system that houses all the company's data. The data in databases are used by business analysts and senior management 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, to get summaries and to drill down to get details. This is the art of database management. This section will help you to prepare for Database Administration Fundamentals section of the BIT1 exam.

#### Background Information:

It all starts with transactional data (sales, customer name and address, employee ID, purchase order data, invoices, etc). These are collected and added to a file. The files are then read by software called 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 the business analysts to access the data to create reports as well as the DBA to build, alter and maintain the various components of the database. This section explores the Database Administrator's role.

After completing this week's activities, you will be able to:

- 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 concurrency control (how many can access at the same time).
- Explain the importance of backups for databases.

## **Competency BIT1 5 – Database Administration Fundamentals Skills and Knowledge**

*The graduate understands the fundamental skills and knowledge required for effective database administration*

### **Topic: Database Administration Fundamentals**

You will be introduced into the many and varied aspects of maintaining databases. You will be reading from your textbook, completing two SkillSoft modules as well as finding good information for web sources.

- **Activity: Data Resources Management**

Read Chapter 5 – “Data Resources Management” in *Management information systems*. Access this textbook’s 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. Take notes on the quiz questions you get wrong and look up the correct responses in your textbook.

After reading the chapter, write the answers to the following questions 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 than a data warehouse?
- How would a finance analyst use a database system?

- **Activity: Overview of a Database Design and Database System**

Complete the following two modules in Skillport/SkillSoft.

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

After completing these modules, write your answers to the following questions 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 systems
  - Describe the evolution of database models
  - Describe the structure and evolution of database architectures
  - Design a database
  - Differentiate between data warehousing and OLAP

- **Activity: Database Normalization:**

Access the following websites for a description of Database Normalization:

[http://www.devhood.com/tutorials/tutorial\\_details.aspx?tutorial\\_id=95](http://www.devhood.com/tutorials/tutorial_details.aspx?tutorial_id=95)

[http://www.devhood.com/tutorials/tutorial\\_details.aspx?tutorial\\_id=104](http://www.devhood.com/tutorials/tutorial_details.aspx?tutorial_id=104)

Answer the following question in your journal:

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

- **Activity: Database Security:**

Read Chapter 13 – “Security and Ethical Challenges” in *Management information systems*. Access this textbook’s 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, write the answers to the following questions in your journal:

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

- **Activity: Application**

Now that you have completed your studies for the Database Administration Fundamentals, it is important to see if you can apply your knowledge by answering the Database Administration Management study questions. Use your textbook and journal to answer these study questions. These questions are located in Appendix A of this Course of Study.

If you have problems answering any of the questions, visit the Business Information Technology Learning Community and pose your questions either in a Discussion Thread or directly to the community’s mentor.

## WEEK 5

### IT Project Management – Part 1

In this section, we will be exploring the tools and processes that make up IT project management. You will be using your textbook as well as some excellent SkillSoft modules that will help you practice some of the information you are reading on project management.

**Background Information:** 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 (3rd ed), 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, on-time, on-budget, meeting the business user’s needs.

After completing the activities for weeks 5 and 6, you will be able to:

- Define systems' development lifecycles
- 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 flow chart
- 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 which 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

### **Competency BIT1 2 – Programming Fundamentals**

*The graduate understands programming fundamentals*

### **Competency BIT1 6 – Information Technology Project Management Skills**

*The graduate understands the skills associated with Information Technology Project Management*

## **Topic: 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 I would urge you to spend the time to understand the concepts and methods well. If you are interested in this aspect of IT management, you should explore obtaining a PMP certificate (outside of WGU).

### **• Activity: Developing Business and IT Solutions**

Read Chapter 12 – “Developing Business/It Solutions” in *Management information systems*. Access this textbook’s 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, write the answers to the following questions 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

- **Activity: SkillSoft Exercise**

Complete the following five modules in Skillport/SkillSoft.

- 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, write your answers to the following questions in your journal:

- Define what a project is and what a project manager's role is
- Describe the process of project management
- Describe the life cycle phases of project management
- Explain what a project scope document does and the role of a project charter
- Be able to describe Gantt and Pert charts and resources for a project
- Explain the role of the project sponsor
- Be able to use the tools to identify the risks of a project and how to manage them

- **Activity: Community Exercise**

Visit the Business Information Technology Learning Community. Look for a discussion thread labeled BIT1: IT Project Management. The text defines systems development life cycle as (1) investigation, (2) analysis, (3) design, (4) implementation and (5) maintenance. IS this 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.

## WEEK 6

### IT Project Management – Part 2

The student will continue to study project management in this section. The last section that you read in Chapter 12 states that SDLC “is a project management approach tailored toward the design and development of information systems.” (O'Brien & Marakas, 2009, p. 494) Do you believe this applies only to IT projects?

**Background Information:** The Project Management Institute (PMI) is the world's leading not-for-profit association for the project management profession. This organization has adopted standards and methods and certifies those institutions who offer the PMP certificate. There are many, many books about project management and an equal number of methodologies. As a serious student of IT management, you should browse through the catalog of project management books and select one or two that appeal to you. You will use them time and again in your career.

After completing weeks 5 and 6 activities, you will be able to:

- Define systems' development lifecycles
- 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 flow chart.
- 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 which 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

## **Competency BIT1 6 – Information Technology Project Management Skills**

*The graduate understands the skills associated with Information Technology Project Management*

### **Topic: Information Technology Project Management**

In this section of Project Management, you will be reviewing the latest version of the Project Management Body of Knowledge. This is the de-facto standard for the project management profession. Then you will practice some of what you have learned with SkillSoft modules.

- **Activity: SkillSoft Exercise**

Log on to Skillport and type in Project Management in the Search For box, then books in the Category box. You will see a list of project management books. Choose and click on the title, "A Guide to the Project Management Body of Knowledge" (PMBOK GUIDE) Fourth Edition.

Read Chapters 1, 2 and 3. Write the answers to the following questions 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?
- Name three types of project organizational structures
- What is a project management process group?

- **Activity: SkillSoft Exercise**

Complete the following three modules in Skillport/SkillSoft.

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

After completing these modules, write your answers to the following questions in your journal:

- Identify the benefits and processes of Project Communications Management
- Identify the benefits of effective communications 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
- Sequence examples of the steps to organizing a portfolio of IT projects
- Explain the benefits of practicing enterprise IT project management

- **Activity: Application**

Now that you have completed your studies for the IT Project Management section, it is important to see if you can apply your knowledge by answering the IT Project Management study questions. Use your textbook and journal to answer these study questions. These questions are located in Appendix A of this Course of Study.

If you have problems answering any of the questions, visit the Business Information Technology Learning Community and pose your questions either in a Discussion Thread or directly to the community's mentor.

## WEEK 7

### 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, which will help you prepare for the Network Fundamental Skills sections of the BIT1 exam.

**Background Information:** Network Fundamental Skills is the process of connecting large mainframe servers to other servers and components to workstations and individual PC's to the Internet and the Web. 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.

After completing this week's activities, you will be able to:

- 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.

### Competency BIT1 7 – Network Fundamentals Skills

*The graduate understands the fundamentals of networking and skills to maintain networks.*

### Topic: Network Fundamentals Skills

You will be using your textbook and SkillSoft modules for studying networking fundamentals. At the rate that this part of IT changes, you may find the learning resources to be already dated however the essential definitions are what you are looking for.

- **Activity: Overview of IT Networks**

Link to this website for a good basic overview of network fundamentals:

[http://www.tcpipguide.com/free/t\\_NetworkingFundamentals.htm](http://www.tcpipguide.com/free/t_NetworkingFundamentals.htm)

After reading this article, answer the following questions 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?

- **Activity: Telecommunications and Networks**

Read Chapter 6 – “Telecommunications and Networks” in *Management information systems*. Access this textbook's 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, write the answers to the following questions 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
- Outline the seven layers of the OSI network model

- **Activity: SkillSoft Exercise**

Complete the following four modules in Skillport/SkillSoft

- 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, write your answers to the following questions 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.

### • **Activity: Application**

Now that you have completed your studies for the Network Management Skills section, it is important to see if you can apply your knowledge by answering the Network Management study questions. Use your textbook and journal to answer these study questions. These questions are located in Appendix A of this Course of Study. If you have problems answering any of the questions, visit the Business Information Technology Learning Community and pose your questions either in a Discussion Thread or directly to the community's mentor.

## Conclusion

Congratulations! You have completed your studies of the basics of technology, project management, database management and network management. If you have been working in IT for any length of time you probably recognize much of the information, however, you should have discovered new information that will help you in your career.

*What are the major points you should take away from this course of study?*

1. Differentiate between the roles of various computer careers.
2. Describe an operating system and its functions.
3. Describe the role of the systems analyst, the programmer and the network analyst and how they interact.
4. Explain the use of a DBMS and the role of the DBA.
5. Describe the function of a database that will be used for decision support systems.
6. Recall the importance of database security, tuning, and backups.
7. Explain what a project is, what role a project manager plays, and how project methodology works with a project plan.
8. Describe the systems development lifecycle (SDLC) and how it relates to project management.
9. Define project stakeholders and project team organizations.
10. Demonstrate project communications, risk and change management.
11. Describe various levels of network configuration.
12. Give examples of the wide variety of networks needed in businesses today.

*Have you learned new skills or practices that you have adopted or will be adopting at your place of work? Look through your journal and make a list of five activities you will undertake in the next month, using the techniques or insights you developed as you studied for this assessment.*

### • **BIT1 Pre-Assessment**

Now that you have completed your study for BIT1, it is time to see if you can successfully complete the pre-assessment. You can access the pre-assessment by

logging on to your AAP and clicking on the pre-assessment available-yes link, and requesting to take the Pre-assessment (PABI). A referral will be sent to your mentor. Take the pre-assessment exam in a quiet place without your notes or books. This will give you a good result, to help determine if you are ready to take the assessment.

To take the pre-assessment:

1. Login to your WGU portal.
2. Select the AAP tab.
3. Select the LDO1 course code link on the left hand side of your AAP.
4. On the Assessment detail screen, select the Pre-assessment tab.
5. Follow the instructions for placing the referral.
6. Coordinate with your mentor who will approve the referral.

- **Review**

Use the coaching report from the pre-assessment to plan your review strategy. The competencies on the coaching report are aligned with the course of study making it easy to review each competencies study topics. Repeat the activities and review your notes in your journal to refresh your memory. Sometimes we have to re-read the textbook chapters in order to make friends with the information. Once you feel comfortable with the material it is time to schedule the objective exam.

- **BIT1 Assessment**

You are now ready to take the assessment. Refer yourself for the exam by following these steps:

1. Login to your WGU portal.
2. Select the AAP tab.
3. Select the BIT1 course code link on the left hand side of your AAP.
4. On the Assessment detail screen, select the Assessment tab.
5. Follow the instructions for placing the referral.
6. Coordinate with your mentor who will approve the referral.
7. Keep a keen eye on the required completion date when scheduling your objective exam. Objective exams take 14 days to schedule

Here are some tips for taking the assessment.

- Before you begin the test, use the paper and pencil provided by your proctor to write down all important facts and information from your studies. You will use these notes to refer to as you proceed through the test
- The exam is testing you on your knowledge of the material, as presented in the text. Your personal experience in IT management may be different than that presented in the textbooks. Rely on the textbook's material to correctly answer the questions.
- The exam will be asking you to relate information you have read in these books to business scenarios. It is important to understand that you are being asked to understand the material, not memorize it.

**Good luck!**

## Bibliography

*A Guide to the Project Management Body of Knowledge (3rd ed).* (2004). Newtown Square, PA: Project Management Institute, Inc.

O'Brien, J. A., and Marakas, G. M. (2009). *Management information systems (9<sup>th</sup> ed.)*. New York: McGraw-Hill Irwin.

## Appendix A

### Study Questions

#### Week 2: Foundations of IT

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.

#### Week 3: Programming, Operating Systems and Systems Analysis Fundamentals

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. Are they the same thing or 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 multi-tasking and multi-processing?
11. Define each of the following systems software categories:
  - Network Management
  - Application Server
  - Database Manager
  - Collaboration Tools
  - 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 MS's .Net?
15. What is a Web Service?

#### **Week 4: Database Administration Fundamentals**

1. Describe a Database and database structures:
  - a. Hierarchical structure
  - b. Network structure
  - c. Relational structure
  - d. Multi-dimensional structure
  - e. Object-oriented structure
2. Which structure would you use to build:
  - a. a CAD system?
  - b. An OLAP system?
  - c. A 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. SQL is used to do what?
15. What maintenance would a DBA do on a database? Why?
16. What is database tuning? Why would a DBA tune a database?
17. A good database design will enable acceptable database performance – true or false?
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?

#### **Weeks 6 and 6 - Information Technology Project Management**

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 be evaluated?
14. Who is responsible for unit testing, for interface testing, for 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 insure 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?

## **Week 7: Network Fundamental Skills**

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, 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?