Principles of Information Technology, Semester B

Course Overview

Principles of Information Technology, Semester B is the second part of a two-semester course. It is designed to help you go deeper in your study of information technology.

You'll explore emerging technologies, multimedia applications, and computer programming concepts and programming languages. You'll learn about different types of computer networks and the need for network security and administration. You'll explore web development tools and web design techniques, and you'll learn to use HTML to design web pages and websites. Finally, you'll explore different career pathways in the field of information technology, and you'll identify the key skills and certifications you will need for these careers.

This course has 14 lessons organized into four units, plus four Unit Activities. Most lessons contain one or more Lesson Activities.

Course Goals

This course will help you meet the following goals:

- Compare programming languages and assess their use for specific projects.
- Examine the impact and influence of technology on communication, businesses, and careers.
- Use programming language to write an algorithm.
- Evaluate the features of information technology tools, such as programming language, computer networks, and web development tools.
- Create a web page using knowledge of HTML, principles of design, and programming concepts.
- Report on career pathways in information technology and the job requirements of specific roles.

General Skills

To participate in this course, you should be able to do the following:

- Perform basic operations with word processing software, such as Microsoft Word or Google Docs.
- Understand the basics of spreadsheet software, such as Microsoft Excel or Google Spreadsheets, but prior hands-on experience is not necessary.
- Understand the basics of presentation software, such as Microsoft PowerPoint, but prior hands-on experience is not necessary.
- Perform online research using various search engines and library databases.
- Communicate through email and participate in discussion boards.

For a complete list of general skills that are required for participation in online courses, refer to the Prerequisites section of the Student Orientation document, found at the beginning of this course.

Credit Value

Principles of Information Technology, Semester B is a 0.5-credit course.

Course Materials

- notebook
- computer with an Internet connection and speakers/headphones
- Microsoft Word or equivalent
- Microsoft Excel or equivalent
- Microsoft Powerpoint or equivalent

Course Pacing Guide

This course description and pacing guide is intended to help you stay on schedule with your work. Note that your course teacher may modify the schedule to meet the specific needs of your class.

Course Components and Grading Rubric

The table gives a breakdown of the weight for each component in the course. Weight represents the percentage of the total score coming from each activity.

Course Components	Count	Weight
Pretest. *Pretests are optional assessments, typically designed for credit recovery use. If a student shows mastery of a lesson's objective, the student may be automatically exempted from that lesson in the upcoming unit. Typically, teachers do not choose to employ exemptive pretests for first-time credit courses. Pretests are not included as a component of the student's final grade.*	4	0%
Module. *Each module in this course contains an interactive tutorial and an associated mastery test. Tutorials may include one or more Lesson Activities that constitute tasks associated with the tutorial. The module score comes from a student's score on the mastery test.*	14	20%
Discussion. *Online discussions allow for higher-order thinking about terminal objectives. An online threaded discussion mirrors the educational experience of a classroom discussion. Teachers can initiate a discussion by asking a complex, open-ended question. Students can engage in the discussion by responding both to the question and to the thoughts of others. Each unit in a course has one predefined discussion topic; teachers may add more discussion topics.*	4	20%
Unit Activity. *Unit Activities are at the end a unit and constitute one or more small tasks. Their purpose is to deepen understanding of key unit concepts and tie them together. Each Unit Activity includes a simple rubric. The teacher versions include both a rubric and modeled sample answers. Unit Activities are teacher graded.*	4	20%
Posttest. *The posttest appears at the end of the unit and mirrors the pretest in structure, content, and complexity.*	4	20%
End of Semester Test. *The end of semester test (EOS) appears at the end of the course. Students are delivered a few items from every tutorial in the course in order to assess the major course objectives.*	1	20%
Total	**31**	**100%**

**Teachers may manually adjust these weights if desired, per district grading requirements.*

Unit 1: Emerging Technologies and Computer Programming

Summary

This unit focuses on emerging technologies such as virtual machines, cloud computing, wireless communication technologies, and specialized software systems. You'll learn about the different media components in multimedia applications, and you'll learn to identify hardware requirements for running multimedia applications. You'll learn to apply basic programming concepts to interpret and design program algorithms, and you'll compare the features and uses of different programming languages.

Day	**Activity/***Objective*	Type
1 day: 1	**Syllabus and Student Orientation** *Review the Student Orientation and Course Syllabus at the beginning of this course.*	Course Orientation
4 days: 2–5	**Emerging and Developing Technologies** *Identify emerging and developing information, communication, and productivity technologies and their impact on business and society.*	Lesson
5 days: 6–10	**Multimedia Applications** *Define the technology components needed to create multimedia and interactive presentations.*	Lesson
5 days: 11–15	**Computer Programming** *Apply basic programming concepts to interpret and design program algorithms.*	Lesson
5 days: 16–20	**Programming Languages** *Identify the features and uses of different programming languages.*	Lesson
4 days: 21–24	**Unit Activity and Discussion—Unit 1** *Practice writing an algorithm and choosing appropriate programming language.*	Unit Activity / Discussion
1 day: 25	**Posttest—Unit 1**	Assessment

Unit 2: Computer Networks

Summary

In this unit, you'll learn about the key features and components of computer networks, identify and compare the features and benefits of different types of networks, and discuss the need for network security and administration.

Day	Activity/*Objective*	Type
5 days: 26–30	**Introduction to Computer Networks** *Identify the key features and components of computer networks.*	Lesson
5 days: 31–35	**Types of Networks** *Identify different types of computer networks and network topologies.*	Lesson
5 days: 36–40	**Network Security and Administration** *Explain the need for network security and administration.*	Lesson
4 days: 41–44	**Unit Activity and Discussion—Unit 2** *Explain how various network administration tools can be used for troubleshooting.*	Unit Activity / Discussion
1 day: 45	**Posttest—Unit 2**	Assessment

Unit 3: Web Design and Development

Summary

In this unit, you'll explore web development tools and languages. You'll learn to use HTML to create web pages, and you'll compare the experience and benefits of using a WYSIWYG HTML editor versus using a text editor. Finally, you'll learn and apply design principles and storyboarding techniques to design effective web pages and websites.

Day	Activity/*Objective*	Type
5 days: 46–50	**Web Design and Development Tools** *Identify the key features of web development tools and languages.*	Lesson
5 days: 51–55	**HTML** *Identify the basics of using HTML and practice using the language to create a web page.*	Lesson
5 days: 56–60	**Designing Web Pages** *Apply design principles and usability features to create multimedia web pages.*	Lesson
5 days: 61–65	**Building a Website** *Identify and describe the process of building a website.*	Lesson
4 days: 66–69	**Unit Activity and Discussion—Unit 3** *Use HTML to create multimedia web pages.*	Unit Activity / Discussion
1 day: 70	**Posttest—Unit 3**	Assessment

Unit 4: Careers in Information Technology

Summary

In this unit, you'll explore different career pathways in the field of information technology. You'll learn about IT certifications, positive workplace skills and behavior, and student organizations that offer support and guidance. Finally, you'll discuss strategies for participating in a professional network and the benefits of doing so.

Day	Activity/*Objective*	Type
4 days: 71–74	**Career Pathways** *Identify career pathways in information technology, including necessary technical skills and potential career progression.*	Lesson
4 days: 75–78	**Certifications and Workplace Skills** *Identify certifications, positive workplace skills and behavior, and student organizations for careers in information technology.*	Lesson
5 days: 79–83	**Professional Networking** *Identify the strategies and benefits of participating in a professional network.*	Lesson
4 days: 84–87	**Unit Activity and Discussion—Unit 4** *Identify careers of personal interest in information technology, including education, skills, and student organizations to achieve career goals.*	Unit Activity / Discussion
1 day: 88	**Posttest—Unit 4**	Assessment
1 day: 89	**Semester Review**	
1 day: 90	**End-of-Semester Exam**	Assessment

Course Map

You will achieve course level objectives by completing each lesson's instruction, assignments, and assessments. For a detailed look at how the materials meet these objectives, review the course map for Semester B.