Computing for College and Careers
Course Map

Computing for College and Careers, Semester A v2.0, is the first part of a two-semester course that is intended as a practical, hands-on guide to help students understand basic computer skills required during a college education as well as in a career. This course covers basic computer hardware components, software applications, productivity applications such as word processing software, spreadsheet software, and presentation software, and new hardware and software technologies such as virtualization, cloud computing, green computing, and blockchain technology. This course also introduces students to various career options and provides guidelines on privacy, security, and ethical issues relating to software and Internet use. This course is based on Career Technical Education (CTE) standards designed to help students prepare for entry into a wide range of careers and/or into postsecondary education. This course falls under the Information Technology career cluster identified by the National Association of State Directors of Career Technical Education Consortium (NASDCTEc).

Semester A, v2.0
Unit 1: Fundamentals of Computers

Course Level Objective(s):
By the end of this course, you'll be able to do the following:

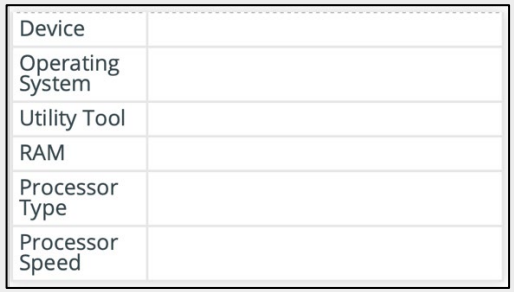
- Assess common computer and printer errors and how best to fix them.
- Examine different types of software and emerging technologies.
- Analyze career options and the skills needed for roles in the field of information technology.

Unit 1:
In this unit, you will:

- Describe the basic hardware components of a computer and troubleshoot common computer and printer problems.
- Identify the different types of software used in computers.

- Describe emerging technologies in the field of computers and their uses.
- Identify career opportunities and important ethics in the field of computers.
- Describe the qualifications and skills needed for careers in the information technology field.

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Computer Hardware	In this lesson, you will describe the basic hardware components of a computer and troubleshoot common computer and printer problems.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will apply your knowledge to resolve a problem with the computer and the printer. ▪ Click the simulation to learn how to update Windows 10 system software. Simulation 1 ▪ Click the simulation to learn how to resolve a printer problem. Simulation 2	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 1 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test
Computer Software	In this lesson, you will identify the different types of software used in computers.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use two system utility software. You can use any device such as a desktop computer, laptop, smartphone, or tablet. Your device can be running any operating system, including Windows, macOS, or Linux. ▪ Describe the steps you followed to *find the system utilities* for your operating system and device. Note the device and its operating system.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 1 Posttest ▪ Computing for College and Careers, Semester A v2.0

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				▪ You need to find information about your system. Record the utility you used, then fill out the information you found in the table. Utility used:  Device Operating System Utility Tool RAM Processor Type Processor Speed	End-of-Semester Test
Emerging Technologies in the Field of Computers	In this lesson, you will describe emerging technologies in the field of computers and their uses.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Which technology concept uses computer resources from multiple locations to solve a common problem? ○ virtualization ○ cloud computing ○ grid computing ○ blockchain ▪ Type your response in the box. Perform online research to find **two** software programs related to mobile computing and cloud computing. Describe each software program and list the different features and services the programs offer to their customers.	▪ Mastery Test ▪ Unit 1 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Computers and Careers	In this lesson, you will identify career opportunities and important ethics in the field of computers.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	Ethics is very important when it comes to the workplace. The following questions present a few scenarios where decisions concerning proper ethics are involved. ▪ Raveena works as a system administrator and notices that unauthorized software is being installed on computers without her authorization. Unfortunately, it is one of her close friends at the office doing it. Should she report him to the management? Why or why not? ▪ Jeff works at an IT company. He receives a call from a competing company asking if he would like to work at their company instead. They begin to ask him details about what he does at his company. How should Jeff handle this situation?	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 1 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test
Unit Activity: Fundamentals of Computers	In this activity, you will describe the qualifications and skills needed for careers in the information technology field.	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Form a team of 2-4 classmates. Each team member can choose a career in information technology based on their interest. Each member should research their chosen profession, including details such as education required for the career option, colleges that provide the education, technical and soft skills required, job duties, current job opportunities, and wage ranges.	▪ Task 1: Create a PowerPoint Presentation ▪ Task 2: Character Study ▪ Task 3: Marketing Strategy

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				Coordinate with your team and resolve any conflicts or problems. Write a short report describing the tasks you performed as a team leader or team member and how you resolved conflicts. Once your team has created the presentation, you will present it to the rest of the class. After each presentation, allow time for feedback and a brief question/answer session. Incorporate the relevant feedback from your classmates into your presentation before submission. ▪ Imagine you are working in the marketing department at a start-up company for augmented reality healthcare products. Your team needs a marketing strategy that needs to include social media management, advertising, and a website. Describe how you will integrate technology and communication skills to solve this work problem. Ensure that your solution can: ○ monitor work progress; ○ set and adhere to timelines; and ○ evaluate progress toward the goal. Write about your plan in a report.	

Unit 2: Working with Documents

Course Level Objective(s): By the end of this course, you'll be able to do the following: ▪ Create and edit common types of documents, databases, and presentations.
Unit 2: In this unit, you will: ▪ Describe how to create basic documents using word processing software and practice typing skills. ▪ Describe how to edit and format a document using word-processing software. ▪ Practice adding images and illustrations to enhance a document. ▪ Identify options for validating a document and practice reviewing changes in documents. ▪ Create a résumé, cover letter, thank you letter, and process infographic using word-processing software.

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Creating Documents Using Word Processing Software	In this lesson, you will describe how to create basic documents using word processing software and practice typing skills.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ In this task, you will measure your typing speed using a typing assignment. Type the following *pangrams*, i.e., sentences, that use every letter of the alphabet (A–Z), without looking at the keyboard. Record the time you take to type each pangram. Use this time to calculate the net words per minute (WPM) for each entry. After you finish typing, use the table to calculate the words per minute. You can calculate your typing speed using the following formula: $$\text{net words per minute (WPM)} = \frac{\left(\frac{\text{total entries}}{5}\right) - \text{number of errors}}{\text{time in minutes}}$$ ▪ You learned how to calculate your typing speed. In this task, you will analyze the factors affecting your typing speed and accuracy. List the common errors you make and the measures you should take to avoid such errors while typing. Follow these measures to improve your typing speed and accuracy. Redo the typing test (Part A) and evaluate your typing speed. ▪ You have recently been interviewed for a position and you wish to write a follow-up letter to the company. Create an interview follow-up letter using the word-processing software templates available on your computer. Write down the steps you took to complete this activity.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 2 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Editing and Formatting Documents	In this lesson, you will describe how to edit and format a document using word-processing software.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use a word processor to format a report. After you've finished, you will answer some questions based on the tasks you performed while formatting the document. ▪ Open the document in your word processor. Type a title for your report. Change the font type and size of the title so it can be distinguished from the body text. ▪ Make the title bold. Describe how you performed this task. ▪ Center the title on the page. Describe how you performed this task. ▪ Indent the paragraphs you've typed so that they're further away from the left margin. Describe how you performed this task. ▪ Add hyperlinks to the online sources you referred to while creating the report. You should be able to click the hyperlink and have it redirect to a website automatically. Describe how you performed this task. ▪ Add a table of contents. Describe how you performed this task.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 2 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Illustrating Documents	In this lesson, you will practice adding images and illustrations to enhance a document.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	Now that you have learned how to illustrate documents, create your own document and illustrate it using the tools available in a word processor. ▪ Open your résumé and add your photo (stored in a folder on your computer) to the top right corner of your document. Using clip art, add a few icons that usually appear on a résumé. Use at least one text box to highlight important information. Do any necessary editing. Write down the steps you have carried out. ▪ Create a document that contains a description of a city or country you plan to visit in the near future. Using the internet and other resources, collect pictures and images of the place, such as the lakes, the important tourist places, places of historical importance, and so on, and add them to your document to creatively illustrate the content. Perform the necessary editing and formatting to the entire document so that it looks beautiful. Write down all the steps you have followed.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 2 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Reviewing Documents	In this lesson, you will identify options for validating a document and practice reviewing changes in documents.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will review and compare documents. ▪ As a student, you most likely have several documents that you have created over your academic career. Find a document that you created over a year ago, or if you cannot locate any, then ask another student for one of their old documents. Open the document and choose one full page to proofread. As you proofread, use your word-processing software to insert at least five comments. Your comments can focus on aspects like word choice, sentence length, and structure. Describe the types of comments that you make while reading your old document. Make suitable changes to your document per your comment. Finally, mark the comments as resolved. ▪ Most word-processing programs offer a feature that allows you to compare an edited document with its original draft. Research the comparison feature. Describe the steps you'd follow to compare the updated document with the original document during the review process.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 2 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Unit Activity: Working with Documents	In this activity, you will create a résumé, cover letter, thank you letter, and process infographic using word-processing software.	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Visit the Occupational Information Network and pick a career you find interesting. Explain why you have chosen the career. ▪ Perform online research to learn about the most popular templates for creating a résumé. Select a template and create and edit a résumé using word-processing software. You may create a simple résumé with respect to an employment opportunity you have looked into. If applicable, you may add a link to your digital portfolio. ▪ Search online for different types of cover letters. Understand why it is important to have a cover letter with a résumé when applying for a job. Visit the website of an organization you'd like to work for and look at their job application. Create a cover letter relevant to the type of job you want to apply to, keeping the formatting consistent with the résumé you just created. ▪ Perform online research about the steps a potential employee must follow to find a suitable job. Using what you found online, create a simple process infographic that you can present to your class. You can use any word-processing program to create the infographic.	▪ Task 1: Research Career Opportunities ▪ Task 2: Create a Résumé and Online Portfolio ▪ Task 3: Creating a Cover Letter ▪ Task 4: Participating in a Mock Interview ▪ Task 5: Creating a Thank You Letter ▪ Task 6: Creating a Process Infographic

Unit 3: Working with Spreadsheets

Course Level Objective(s):
By the end of this course, you'll be able to do the following:

- Create and edit common types of documents, databases, and presentations.

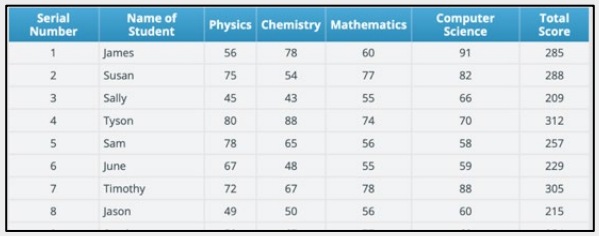
Unit 3:
In this unit, you will:

- Create and manage a workbook.
- Practice setting up basic calculations in a spreadsheet.
- Describe how to format data in a spreadsheet.
- Describe the options to represent data visually in a spreadsheet.
- Create and visually represent a budget using spreadsheet software.

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Creating and Managing a Workbook	In this lesson, you will create and manage a workbook.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will follow the given steps to create a workbook. ▪ Start by creating a blank workbook. Save the file with the name "Apex Systems." Create **two** worksheets with the titles "2020" and "2021." ▪ Enter the following data in the relevant cells of the "2021" worksheet:	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 3 Posttest ▪ Computing for College and Careers, Semester A v2.0

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				○ A1: 100 ○ A2: 200 Then, use the AutoFill feature to automatically fill the data for the cells from A3 to A12. ▪ In the worksheet "2020," add the title: "Apex Systems Information" in cell A1 and hyperlink it to your school website. ▪ Now, print one copy of the test workbook. Write the steps you took to print it.	End-of-Semester Test
Performing Basic Calculations in a Spreadsheet	In this lesson, you will practice setting up basic calculations in a spreadsheet.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use math functions to analyze the data in a spreadsheet. The spreadsheet shows the points individual players scored in each of the five basketball games. ▪ Determine how much the team scored in each of the five games: ○ Record the function-based formula that you'll use to calculate the score for the first game in the space below. ○ Using the spreadsheet, calculate the scores for all five games. ○ To show your work, copy the relevant section of the spreadsheet and paste it in the space below.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 3 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				▪ There are ten players in the team, but only five can play in a game. Determine how many games each of the players played: o Record below the function that you'll use to determine how many games Michelle played. o Using the spreadsheet, make the same calculation for all the players. o To show your work, copy the relevant section of the spreadsheet and paste it in the space below. ▪ Determine the average score of each player over the five games: o Record below the function that you'll use to determine Michelle's average score. o Using the spreadsheet, calculate the average score for all the players. o To show your work, copy the relevant section of the spreadsheet and paste it in the space below. ▪ Round the average scores of the players to display only two decimal places: o Record below the function that you'll use to round Michelle's average score. o Using the spreadsheet, calculate the average score for all the players. o To show your work, copy the relevant section of the spreadsheet and paste it in the space below.	

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Formatting Data in a Spreadsheet	In this lesson, you will describe how to format data in a spreadsheet.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use the data formatting options in a spreadsheet program. ▪ Using a spreadsheet program of your choice, create a worksheet to display the following data.  ▪ Insert a row above the column headings and enter the text “Scores for Semester 1” just above Serial Numbers. Merge the adjacent cells up to the cell just above Total Score. ▪ Make the font size of the heading large and format the heading in bold. Add background colors for the main heading and the subheadings. ▪ Hide the subject scores of all students so that only the columns Serial Number, Name of Student, and Total Grade are visible.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 3 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Serial Number	Name of Student	Physics	Chemistry	Mathematics	Computer Science	Total Score
1	James	56	78	60	91	285
2	Susan	75	54	77	82	288
3	Sally	45	43	55	66	209
4	Tyson	80	88	74	70	312
5	Sam	78	65	56	58	257
6	June	67	48	55	59	229
7	Timothy	72	67	78	88	305
8	Jason	49	50	56	60	215

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Representing Data Visually in a Spreadsheet	In this lesson, you will describe the options to represent data visually in a spreadsheet.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	You have learned about the graphical elements that you can add in a spreadsheet. Create your own spreadsheet using these elements. ▪ Create a chart using the sample data in the table below. Recollect the steps on how to create a chart, and explain the necessary steps based on the data in the table. Mention what the x- and the y-axes state and your interpretation of the data represented in the chart. Year / Percentage Increase in Expenses 2005 / 25.3 2007 / 30 2009 / 35 2011 / 35.8 2014 / 40 o Use the above data to create another type of graph and observe the differences between the representations.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 3 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Unit Activity: Working with Spreadsheets	In this activity, you will create and visually represent a budget using spreadsheet software.	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Your community plans to hold a fundraiser to improve its infrastructure and environment. The community has a budget of $10,000 for organizing the event. Approximately 200 people will attend the event. You have the responsibility of managing the community's finances and ensuring that the event is a big success. In this activity, you will use spreadsheet software for completing the following tasks. ○ Get an estimate of the various expenses involved in arranging the fundraiser. ○ Present the cost estimates in a tabular form using spreadsheet software. ○ Apply formatting to the table and cell data. You may use online resources to find any information that you need. ▪ In this activity, you will use spreadsheet software for completing the following tasks: ○ Create a pie graph to represent the estimated budget (expenses) visually. ○ Create a bar graph to represent the estimated budget (expenses) visually.	▪ Task 1: Creating a Budget Using Spreadsheets ▪ Task 2: Visually Representing a Budget Using Spreadsheets

Unit 4: Working with Presentations and Databases

Course Level Objective(s):
By the end of this course, you'll be able to do the following:

- Examine different types of software and emerging technologies.
- Create and edit common types of documents, databases, and presentations.

Unit 4:
In this unit, you will:

- Create a basic presentation and describe effective presentation techniques.
- Describe the options to enhance a presentation.
- Describe the fundamental concepts of a database and practice creating a database.
- Create and format a slideshow about new mobile technologies using presentation software.

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Creating a Basic Presentation	In this lesson, you will create a basic presentation and describe effective presentation techniques.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you'll research and create a checklist to ensure the smooth delivery of a presentation. You'll also research and describe how you can enhance the delivery of a presentation. ▪ You need to make a presentation on the impact of technology on our lives. The presentation focuses on an audience of more than 100 people in a large auditorium. Conduct online research and create a checklist of at least **five** points that you must check	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 4 Posttest ▪ Computing for College and Careers, Semester A v2.0

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				prior to the presentation to ensure that the presentation is delivered smoothly. ▪ Research and briefly identify **three** elements that will add value and enhance the effect of a presentation. Select elements or items that will be useful to you on the day of the presentation and will help you create the right impact.	End-of-Semester Test
Enhancing a Presentation	In this lesson, you will describe the options to enhance a presentation.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Type your response in the box. Research online and collect information related to a healthy lifestyle. Next, use a presentation software product to create a presentation on the topic. In your presentation, include a few elements that you learned in the lesson. Use your creativity to make the slides visually appealing and easy to understand. Describe the steps you used to create the presentation. ▪ Select the correct answer from each drop-down menu. You wish to display ingredients and their quantities in a recipe presentation. Which slide elements can you use in this situation? ○ To display the ingredients for a dish, use a ___ . Use a ___ to display the variations in the protein content across the ingredients.	▪ Mastery Test ▪ Unit 4 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Introduction to Databases	In this lesson, you will describe the fundamental concepts of a database and practice creating a database.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	You learned about the process of creating a database and the various operations related to a database. In this activity, you will help a librarian create a simple database of books related to classical literature. Go to a nearby library (or an online library) and identify any 20 all-time classics of your choice. Also, obtain their author names, publisher names, the publication years (if applicable), and the genres (drama, satire, horror, and so on) to which the books belong. ▪ Enter the data in a table using a spreadsheet or word processing program. Copy the table and paste it in the space provided. You may also paste a screenshot of the table. ▪ Describe how you'd create the database. ▪ The librarian wants you to find the number of books that belong to each genre. How will you do this? ▪ The librarian wants to plan a new bookshelf and needs data about the number of books starting with a particular letter in order to arrange the books alphabetically. How will you retrieve this data?	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 4 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Unit Activity: Working with Presentations and Databases	In this activity, you will create and format a slideshow about new mobile technologies using presentation software.	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ In this activity, you will use presentation software and complete the following tasks: ○ Conduct online research about new mobile technologies. ○ Using the collected data, prepare a presentation that discusses each of the technologies with the help of the various functions of presentation software, including text, bullets, tables, as well as images, in the presentation. ○ Customize the transitions of each slide. Make sure that the presentation has at least five slides. ○ Paste the slides you created in the sample answer. You may use online resources to find any information that you need.	▪ Task: Creating a Presentation

Unit 5: Browsing and Communicating Using the Internet

Course Level Objective(s):
By the end of this course, you'll be able to do the following:

- Analyze career options and the skills needed for roles in the field of information technology.
- Examine use of the internet, how information is exchanged, and security measures for internet use.

Unit 5:
In this unit, you will:

- Explain the fundamental concepts of the Internet.
- Describe the important concepts related to the World Wide Web.
- Identify various methods to exchange information over the Internet.
- Describe security threats and how to use the internet more safely and securely.
- Describe the features of social networking sites and how companies can use search engine optimization (SEO).
- Research a student organization, a professional organization, and a mentorship program.

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Introduction to the Internet	In this lesson, you will explain the fundamental concepts of the Internet.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you'll describe the different types of internet connections. ▪ Use what you have learned in the lesson to describe how you connect to the internet to access this course. Remember to state what kind of internet connection you use and the devices you use. If you know what data download speed your internet service provider (ISP) advertises, state the speed in megabytes per second (MBps). [Note that ISPs often advertise data speeds in megabits per second (Mbps) or gigabits per second (Gbps). 1 Mbps is approximately 0.125 MBps, while 1 Gbps is approximately 125 MBps.] ▪ Estimate the actual speed of data download through your internet connection in bytes per second or megabytes per second for a specific kind of data. One possible way to do this is to download a sufficiently large, publicly available file (for example, a downloadable file from a government agency such as NASA). You can note the size of the file and check how long the download takes. The download speed in megabytes per second is the size of the file in megabytes divided by the time in seconds. Another way is to examine the status of your internet connection if you're using a laptop or desktop. The status of the connection usually includes the number of packets or the number of bytes received and is	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 5 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				updated about once every second. Make sure you're receiving data while you time the data transfer. State the method you used to estimate the download speed.	
World Wide Web	In this lesson, you will describe the important concepts related to the World Wide Web.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use a web browser and a search engine to search the web for information on animals that are native to Australia and animals that are native to Japan. You will determine the most effective keywords toward this, perform the search, and note down how a different search phrase could return more satisfactory results. ▪ Search the web using a single search term for information on animals that are native to Australia, and animals that are native to Japan. Determine the most effective keywords and Boolean operators for finding this information. ▪ Enter your keywords and Boolean operators from part A in a search engine, and list the first ten results on the results page. ▪ In the search results you got, did you find the information you were looking for? If not, think about and note down how a different choice of search keywords and Boolean operators could return more satisfactory results.	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 5 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Exchanging Information Using the Internet	In this lesson, you will identify various methods to exchange information over the Internet.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will use an email program to write and send an email message to multiple recipients. ▪ In the box below, record which email program you will use for this task and your email address. If you do not have an email account, sign up for one as described previously and then complete this task. ▪ Create a new email message to send to two classmates or friends. ○ Type the email address of the main recipient in the To: address box. ○ Type the email address of another classmate or friend in the Cc: address box. ○ Type your own email address in the Bcc: address box so you receive a copy of the email. In the space below, record the addresses you entered into each of these address boxes. ▪ Type the subject of the mail in the Subject box. Copy the text you typed in the Subject box and paste it below the Bcc: box in the space below. ▪ Click the Send button to send the mail. Confirm that no error message pops up when you do this. Then, confirm that the message has been sent by checking for it in the "Sent Messages" folder of the email	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 5 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				program. In the box below, note down what happened.	
Security Concerns and Ethics of Internet Use	In this lesson, you will describe security threats and how to use the internet more safely and securely.	▪ Discussion ▪ Tutorial	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	In this activity, you will conduct online research using the internet and your preferred search engine. Research some of the most harmful cyberattacks of all time that have infected computers. ▪ Enter appropriate keywords to get information on the deadliest viruses of all time. Note the keywords you used in your search. Also, copy-paste the links to the web pages you used from the search results to find the information. ▪ Fill in the following table with information about **three** of the top ten viruses. Describe "How" the attack was launched and the "Damage Caused" in **three–five** sentences each. Name | Type | When | Where | How | Damage Caused	▪ Lesson Activities: Self-Evaluations ▪ Mastery Test ▪ Unit 5 Posttest ▪ Computing for College and Careers, Semester A v2.0 End-of-Semester Test

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
Unit Activity: Browsing and Communicating Using the Internet	In this activity, you will describe the features of social networking sites and how companies can use search engine optimization (SEO).	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Discussion Board ▪ Slide Narration ▪ Glossary	▪ Conduct online research about any six social networking websites or applications that have achieved immense popularity in the past decade. Compare and contrast the features of these social networking sites or applications and describe how each of them serves a unique purpose for its user base.	▪ Task 1: Social Networking Websites ▪ Task 2: Search Engine Optimization (SEO)
Course Activity: Joining a Student Organization	In this activity, you will research a student organization, a professional organization, and a mentorship program.	▪ Discussion ▪ Topic Instruction	▪ Dictionary ▪ Highlighter ▪ Click to Speak ▪ Translate ▪ Slide Narration ▪ Glossary	In this task, you will select a student organization, such as the Technology Student Association (TSA), in which you would like to participate. Conduct online research and answer these questions. ▪ What is the main goal and purpose of this organization? ▪ What are the requirements for and processes of gaining membership into the organization you chose? ▪ What are some of the benefits, duties, and responsibilities that being a member of this organization entails? ▪ What are some of the opportunities provided by this organization for developing leadership skills?	▪ Task 1: Joining a Student Organization ▪ Task 2: Communities of Professionals and Mentorship

Lesson	Lesson Level Objective	Instructional Material	Tools	Activity	Assessment
				A professional continues to learn from others through professional communities and mentorships. In this task, you'll select a professional organization in a computer-related field of your choice. You'll also select a company's mentorship program. Conduct online research and answer these questions. ▪ Research a professional organization. What are the benefits of being involved with the organization? ▪ Research a mentorship program offered by a company. How does the company implement its program?	