



Information
Technology



Scope & Sequence

Course Name: Principles of Information Technology
TSDS PEIMS Code: 13027200

Course Credit: 1.0
Course Requirements: Grade Placement 9-12.
Prerequisites: None.

Course Description: In Principles of Information Technology, students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

NOTE: This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered.

Total Number of Periods Total Number of Minutes Total Number of Hours	175 Periods 7920 Minutes 132 Hours*	*Schedule calculations based on 175/180 calendar days. For 0.5 credit courses, schedule is calculated out of 88/90 days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, etc.
Unit Number, Title, and Brief Description	# of Class Periods* (assumes 45-minute periods) Total minutes per unit	TEKS Covered 130.302. (c) Knowledge and Skills
Unit 1: Career Exploration and Employability	10 periods 450 minutes	(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:



Students will expand their knowledge base and interest in careers and entrepreneurship opportunities in the field of Information Technology. Students will explore and discuss employment opportunities and industry certifications and requirements in small groups and as a class as they develop individualized career preparation plans. Students will discover and use resources available through Computer and Technology Student Organizations (CTSO) or other extracurricular organization(s) to further develop leadership and employability skills. Students will discuss and demonstrate appropriate and proper etiquette and behavior as well as effective listening and speaking skills in this and in all units as they further develop their personal and career goals and increase their interpersonal and employability skills.

- (A) identify and demonstrate work behaviors and qualities that enhance employability and job advancement such as regular attendance, attention to proper attire, maintenance of a clean and safe work environment, pride in work, flexibility, and initiative;
 - (B) employ effective verbal and nonverbal communication skills;
 - (C) employ effective reading and writing skills;
 - (D) solve problems and think critically;
 - (E) demonstrate leadership skills and function effectively as a team member;
 - (F) identify and implement proper safety procedures; and
 - (G) demonstrate planning and time-management skills such as storyboarding and project management, including initiating, planning, executing, monitoring and controlling, and closing a project.
- (2) The student identifies various employment opportunities in the IT field. The student is expected to:
- (A) identify job opportunities and accompanying job duties and tasks;
 - (B) research careers of personal interest along with the education, job skills, and experience required to achieve personal career goals; and
 - (C) describe the functions of resumes and portfolios.



Unit 2: Technology Skills in the 21st Century Students will engage in opportunities to develop skills in electronic communication and research into 21st Century technologies. Students will participate in group activities the enhance internet browsing skills, searching skills and utilization of web resources. Students will discuss and demonstrate knowledge of computer threats with an introduction to Cyber Security awareness.	10 periods 450 minutes	(3) The student uses evolving and emerging technologies to exchange information. The student is expected to: (A) identify and describe functions of various evolving and emerging technologies; (B) send and receive text information and file attachments using electronic methods such as email, electronic bulletin boards, and instant message services; (C) demonstrate effective Internet search strategies, including keywords and Boolean logic, using various available search engines; (D) identify the various components of a Uniform Resource Locator; (E) demonstrate ability to effectively test acquired information from the Internet for accuracy, relevance, and validity; (F) explain issues concerning computer-based threats such as computer viruses, malware, and hacking; and (G) explain issues concerning Internet safety such as identity theft, online predators, cyber-bullying, and phishing.
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Unit 3: Software Technical Skills – Word Processing

Students will engage in opportunities to develop software skills in word processing software. Students will participate in skilled and technical activities that will enhance the use of word processing while focusing on hands-on projects to develop advanced word processing skills. Students will apply knowledge in creation of real word documents. Students will discuss and demonstrate knowledge of word processing terminology.

15 periods
675 minutes

- (7) The student applies word-processing technology. The student is expected to:
- (A) identify the terminology associated with word-processing software;
 - (B) edit a variety of text documents using functions such as pagination, appropriate white space, tab settings, and font style, size, and color; and
 - (C) create professional documents such as memorandums, technical manuals, or proposals using advanced word-processing features.

Unit 4: Software Technical Skills – Spreadsheets

Students will engage in opportunities to develop software skills in spreadsheet software. Students will participate in skilled and technical activities that will enhance the use of spreadsheets while focusing on hands-on projects to develop advanced spreadsheet concepts. Students will apply knowledge in creation of real word documents. Students will discuss and

15 periods
675 minutes

- (8) The student applies spreadsheet technology. The student is expected to:
- (A) identify the terminology associated with spreadsheet software;
 - (B) use numerical content to perform mathematical calculations;
 - (C) use student-created and preprogrammed functions to produce documents such as budget, payroll, statistical tables, and personal checkbook register;



demonstrate knowledge of spreadsheet terminology.		<ul style="list-style-type: none"> (D) identify, generate, and describe the function of comma separated value files; (E) create and analyze spreadsheets incorporating advanced features such as lookup tables, nested IF statements, subtotals, cell protection conditional formatting, charts, and graphs; and (F) perform sorting, searching, and data filtering in documents.
<p>Unit 5: Software Technical Skills – Presentation Management</p> <p>Students will engage in opportunities to develop software skills in presentation management software. Students will participate in skilled and technical activities that will enhance the use of presentation management software while focusing on hands-on projects to develop advanced presentation management concepts. Students will discuss and demonstrate knowledge of presentation management software terminology.</p>	<p>5 periods 225 minutes</p>	<p>(11) The student applies presentation management technology. The student is expected to:</p> <ul style="list-style-type: none"> (A) identify the terminology and functions of presentation software; and (B) create, save, edit, and produce presentations incorporating advanced features such as links, hyperlinks, audio, and graphics.



**Unit 6: Software Technical Skills –
Database Technology**

Students will engage in opportunities to develop software skills in database software. Students will participate in skilled and technical activities that will enhance the use of database software while focusing on hands-on projects to develop advanced database concepts. Students will discuss and demonstrate knowledge of database software terminology.

5 periods
225 minutes

- (10) The student explores database technology. The student is expected to:
- (A) identify the terminology associated with database software and database functions;
 - (B) explore the application of databases;
 - (C) identify and explain the purpose and elements of a query language;
 - (D) identify and explain the purpose of fields and records; and
 - (E) describe the process of constructing a query, including multiple search parameters.

**Unit 7: Software Technical Skills –
Computer Programming**

Students will engage in opportunities to develop software skills in computer programming. Students will participate in skilled and technical activities that will enhance the use of computer programming while focusing on hands-on projects to develop advanced programming concepts. Students will apply knowledge in creation of real world programs. Students will discuss and demonstrate knowledge of

20 periods
900 minutes

- (9) The student explores computer programming concepts. The student is expected to:
- (A) identify the function of compilers and interpreters;
 - (B) explain the difference between the operation of compilers and interpreters;
 - (C) identify various computer languages and how the languages are used in software development;
 - (D) recognize data representation in software development such as string, numeric, character, integer, and date;
 - (E) identify and explain the concept of algorithms; and



computer programming terminology and languages.		(F) describe the flow of a structured algorithm, including linear and iterative instructions such as using a flow chart.
Unit 8: Software Technical Skills – Webpage Design Students will engage in opportunities to develop software skills in webpage design. Students will participate in skilled and technical activities that will enhance the use of webpage design while focusing on hands-on projects to develop web design concepts. Students will apply knowledge in creation of real world, full functioning web sites. Students will discuss and demonstrate knowledge of webpage design terminology.	15 periods 675 minutes	(12) The student applies design and web publishing techniques. The student is expected to: (A) identify the terminology associated with web page development and interactive media; (B) identify and explain design elements such as typeface, color, shape, texture, space, and form; (C) identify and explain design principles such as unity, harmony, balance, scale, and contrast; (D) identify and explain common elements of Hyper Text Markup Language (HTML) such as tags, stylesheets, and hyperlinks; and (E) create a web page containing links, graphics, and text using appropriate design principles.
Unit 9: Computer Hardware Students will engage in opportunities to develop software skills in computer hardware associated in information systems. Students will participate in skilled and technical activities that will enhance	20 periods 900 minutes	(4) The student demonstrates knowledge of the hardware components associated with information systems. The student is expected to: (A) identify major hardware components and their functions; (B) use available reference tools as appropriate; and



the use of computer hardware and tools. Students will discuss and demonstrate knowledge of computer hardware terminology by identifying major components and their functions.		(C) connect and use a variety of peripheral devices such as mouse, keyboard, microphone, digital camera, and printer.
Unit 10: Computer Software and Operating Systems Students will engage in opportunities to develop software skills in computer software associated in information systems. Students will participate in skilled and technical activities that will enhance the use of computer software while focusing on hands-on projects to develop advanced software concepts. Students will demonstrate skills in operating system fundamentals removal. Students will discuss and demonstrate knowledge of computer software terminology by identifying major components and their functions.	20 periods 900 minutes	(5) The student demonstrates knowledge of the different software associated with information systems. The student is expected to: (A) differentiate between systems and application software; (B) identify and explain major operating system fundamentals and components such as disk operations, graphical user interface components, and hardware drivers; (C) explain the purpose of file types across software products; (D) demonstrate use of computer numbering systems and internal data representation such as identifying the hexadecimal value of a color; (E) compare and contrast open source and proprietary software; (F) explain use of system management tools;



		<ul style="list-style-type: none">(G) apply proper file management techniques such as creating, naming, organizing, copying, moving, and deleting files;(H) use appropriate file protection and security; and(I) explain the process for discovering, quarantining, and removing viruses from a computer system.
Unit 11: Computer Networking Students will engage in opportunities to develop software skills in computer networking associated in information systems. Students will participate in skilled and technical activities that will enhance the use of computer networking and be able to identify networks. Students will apply skills in network operating systems and network troubleshooting. Students will discuss and demonstrate knowledge of computer networking terminology by identifying major networking components.	15 periods 675 minutes	<ul style="list-style-type: none">(6) The student analyzes network systems. The student is expected to:<ul style="list-style-type: none">(A) identify hardware associated with telecommunications and data networking such as servers, routers, switches, and network connectors;(B) identify and describe various types of networks such as peer-to-peer, local area networks, wide area networks, wireless, and Ethernet;(C) identify functions of network operating systems; and(D) explain troubleshooting techniques for various network connection issues.



Unit 12: Computer Ethics and Legal issues in Information Technology

Students will engage in opportunities to develop skills in ethical procedures in information technology. Students will participate in group activities to enhance knowledge of Information Technology laws. Students will discuss and demonstrate knowledge of computer ethics.

10 periods
450 minutes

- (13) The student understands and demonstrates legal and ethical procedures as they apply to the use of information technology. The student is expected to:
- (A) explain and demonstrate ethical use of technology and online resources;
 - (B) adhere to intellectual property laws;
 - (C) explain the concept of intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;
 - (D) examine the consequences of plagiarism;
 - (E) identify and explain unethical practices such as hacking, online piracy, and data vandalism; and
 - (F) demonstrate ethical use of online resources, including citation of source.