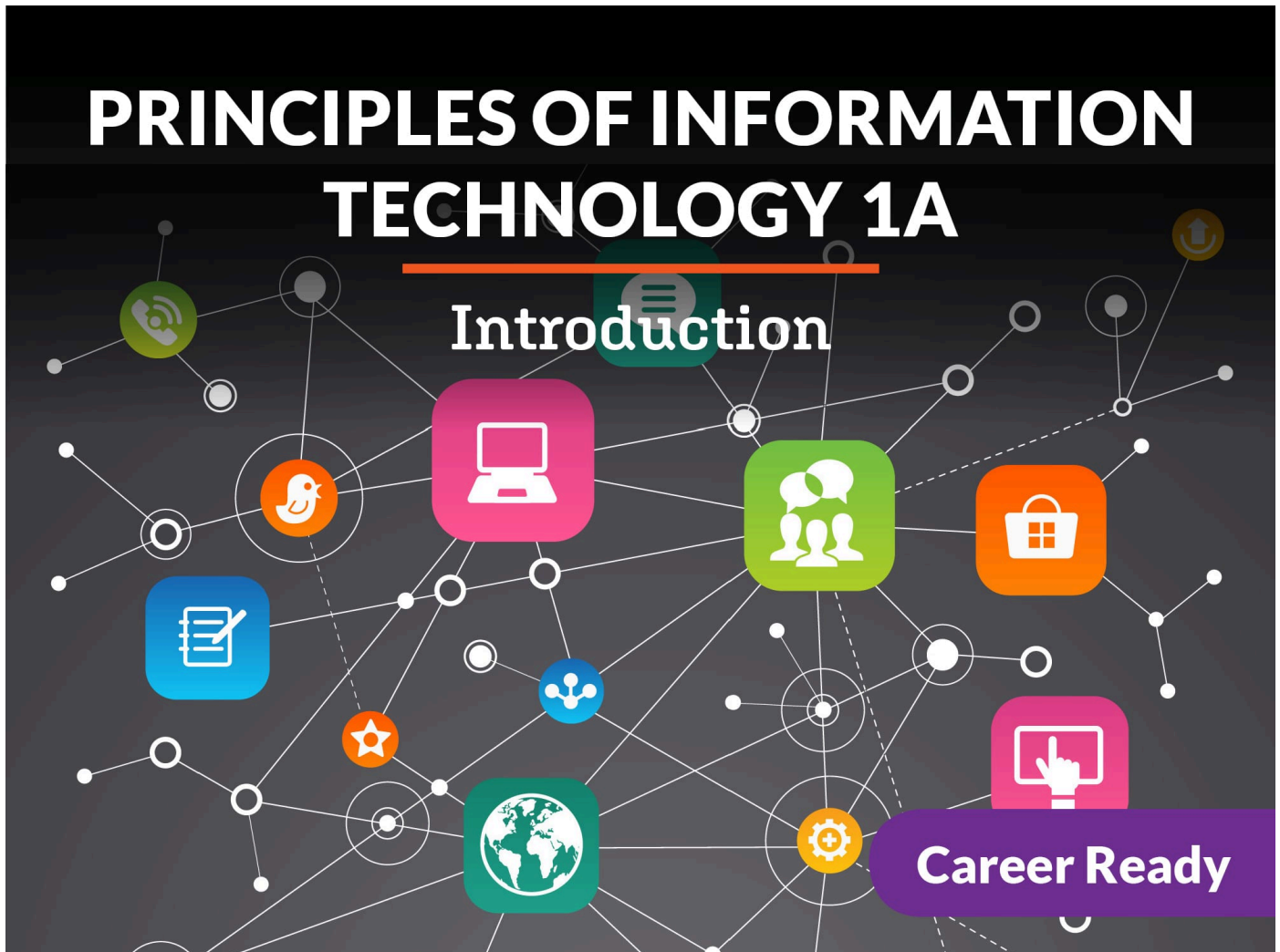


Course Syllabus

What you will learn in this course



Principles of Information Technology 1a: Introduction

Are you ready to develop your understanding of computers from the inside out? In this course, you will discover hardware and software options for a computer, how computers work together to create networks, and how the internet works. You will explore the major types of software categories you will need to know in most professional spaces including word processing, spreadsheets, and database information. You will also develop skills like programming and app building before putting everything together in a final project where you'll build an e-book. Let's get started!

Unit 1: The Basics: Understanding Computer Hardware

We interact with dozens of computers every day, whether we realize it or not. From smartphones and ovens to grocery store kiosks, computers are all around us. Their purpose is to process information in a

meaningful way, and it takes quite a lot of hardware to get the job done! We will explore the basics of computer hardware, peripherals, maintenance, and troubleshooting. At the end, get ready to apply your knowledge to a common hardware problem and solve it!

What will you learn in this unit?

After studying this unit, you will be able to:

1. Compare and contrast types of computers and their purposes
2. Identify and define the components of the von Neumann architecture model
3. Describe on-board and add-on components of a computer
4. Describe the purpose of peripherals and how to connect them to a computer
5. Apply a common troubleshooting methodology for hardware problems

UNIT 1 Assignments	
Assignment	Type
Lesson 01: What Do Computers Do?	Lesson
Lesson 02: How Do Computers Work?	Lesson
Lesson 03: Tying It All Together	Lesson
Lesson 04: How Do We Communicate with a Computer?	Lesson
Lesson 05: Maintenance and Troubleshooting	Lesson
Critical Thinking Questions	Submission
Activity 1: What Do I Want to Learn?	Submission
Activity 2: What Do I Know about Peripherals, Processors, and Memory?	Submission
Cumulative Project 1: How Can I Maintain My Computer?	Submission
Unit 1 Discussion 1	Discussion
Unit 1 Discussion 2	Discussion
Unit 1 Quiz	Multiple Choice

Unit 2: Data and Storage

Data is not just a technical computing term anymore—it affects almost everyone in one way or another. From the phones we use to the groceries we buy, data is being generated at unprecedented levels. All of that data needs to have a home, which is where secondary storage comes in. Get ready to learn about hot topics involving data and storage devices—and how they affect you!

What will you learn in this unit?

After studying this unit, you will be able to:

1. Explain the difference between data and information
2. Discuss how data mining and data analysts are connected
3. Convert between decimal and binary values
4. Distinguish which data type should be used to store particular pieces of data
5. Compare and contrast different methods of storage

UNIT 2 Assignments	
Assignment	Type
Lesson 01: What Is Data?	Lesson
Lesson 02: Collecting and Protecting Data	Lesson
Lesson 03: Bits and Pieces	Lesson
Lesson 04: Binary in Real Life	Lesson
Lesson 05: Storage Types	Lesson
Critical Thinking Questions	Submission
Activity: How Can I Collect and Analyze Data?	Submission
Cumulative Project 2: What's Important to Know About Storage?	Submission
Unit 2 Discussion 1	Discussion
Unit 2 Discussion 2	Discussion
Unit 2 Quiz	Multiple Choice

Unit 3: Systems and Software 101

If hardware is the body of the computer, then software is its mind. Software does the thinking for the computer in a variety of ways. It allows users to interact with the hardware and provides tools for maintaining it. Application software enables users to be productive and entertain themselves. The future of software development is exciting, futuristic, and just brimming with cool opportunities for new programmers. Software is a broad topic, so get ready to learn!

What will you learn in this unit?

After studying this unit, you will be able to:

1. Describe the main operating systems in use today
2. Explain the features of an operating system

3. Give examples for why files and file management systems help with organization
4. Use various application software programs to accomplish tasks
5. Configure your Chrome browser and Gmail account
6. Contrast the types of software delivery models and licensing options

UNIT 3 Assignments	
Assignment	Type
Lesson 01: Software: The Basics	Lesson
Lesson 02: In Depth with Operating Systems	Lesson
Lesson 03: File It Away for Later	Lesson
Lesson 04: Application Software	Lesson
Lesson 05: Just Browsing!	Lesson
Lesson 06: Software Delivery and Installation	Lesson
Critical Thinking Questions	Submission
Activity: Which Operating System Is Right for Me?	Submission
Cumulative Project 3: How Can I Organize My Files?	Submission
Unit 3 Discussion 1	Discussion
Unit 3 Discussion 2	Discussion
Unit 3 Quiz	Multiple Choice

Unit 4: Networking Fundamentals

The networking world is fast-paced and innovative. The internet can seem mysterious, but behind it are wires, cables, and satellites that carry data to and from computers. Different kinds of network hardware and software are used to enable this communication, and certain rules must be followed. Get ready to dive into the exciting world of the internet and learn just how simple yet complex it can be.

What will you learn in this unit?

After studying this unit, you will be able to:

1. Analyze the benefits and risks of using a network
2. Identify various types of networks and explain their purposes
3. Describe the four major network topologies and name the types of internet service providers
4. Explain the packet switching process
5. Define and explain the functions of different pieces of network hardware
6. Discuss network security issues and how to troubleshoot them

UNIT 4 Assignments	
Assignment	Type
Lesson 01: What Is a Network?	Lesson
Lesson 02: Types of Networks	Lesson
Lesson 03: Network Topologies and Connections	Lesson
Lesson 04: How Does the Internet Work?	Lesson
Lesson 05: Network Hardware	Lesson
Lesson 06: Network Admin and Security	Lesson
Critical Thinking Questions	Submission
Activity 1: How Can I Troubleshoot My Internet Connection?	Submission
Cumulative Project 4: How Can I Set Up a Network?	Submission
Activity 2: What Have I Learned So Far?	Submission
Unit 4 Discussion 1	Discussion
Unit 4 Discussion 2	Discussion
Unit 4 Quiz	Multiple Choice

Midterm Exam

1. Review information acquired and mastered from this course up to this point.
2. Take a course exam based on material from the **first half** of the course (**Note:** You will be able to open this exam only one time.)

Midterm Exam Assignments	
Assignment	Type
Midterm Exam	Multiple Choice
Midterm Discussion	Discussion

Unit 5: Word Processing

The business and academic worlds make heavy use of word processing software. Over 25 million people worldwide^[1] use Google Docs, making it one of the most popular word processing applications. Not only does Google Docs provide basic functionality for creating and editing documents, it also has some cool collaboration features. Get ready to learn the ins and outs of Google Docs and how you can use it to enhance your writing.

What will you learn in this unit?

After studying this unit, you will be able to:

1. Explain the basic terminology of word processing software
2. Use word processing features for sharing and collaborating on documents
3. Create and format documents using Google Docs
4. Create professional documents using Google Docs

Unit 5 Assignments	
Assignment	Type
Lesson 01: Word Processing Basics	Lesson
Lesson 02: What's in Your Toolbox?	Lesson
Lesson 03: Page and Text Elements	Lesson
Lesson 04: Professional Documents	Lesson
Critical Thinking Questions	Submission
Activity: How Can I Advertise with Google Docs?	Submission
Cumulative Project 5: How Can I Train Employees to Use Google Docs?	Submission
Unit 5 Discussion 1	Discussion
Unit 5 Discussion 2	Discussion
Unit 5 Quiz	Multiple Choice

Unit 6: Spreadsheets and Databases

All of the data being generated daily in the world needs a place to live. Enter spreadsheets and databases. These kinds of software can help organize, retrieve, manipulate, backup, and export data in various ways. From the simplest spreadsheet to the most complex database, data storage technology is vital to the proper functioning of many societies. So get ready to learn what spreadsheets and databases are capable of by following along in Google Sheets and Airtable.

What will you learn in this unit?

After studying this unit, you will be able to:

1. Create and format a spreadsheet
2. Apply spreadsheet formulas and functions
3. Analyze data through filters, sorting, and conditional formatting
4. Demonstrate data visually by creating and modifying charts

5. Describe database concepts and types
6. Create a basic database and input data using a form

Unit 6 Assignments	
Assignment	Type
Lesson 01: Spectacular Spreadsheets	Lesson
Lesson 02: All About the Data	Lesson
Lesson 03: Advance Your Skills	Lesson
Lesson 04: Visualize the Data	Lesson
Lesson 05: Unleash the Power of the Database	Lesson
Lesson 06: Soar into the Air(table)	Lesson
Critical Thinking Questions	Submission
Activity 1: How Can We Interpret Data?	Submission
Activity 2: How Can We Keep Track of Student Data?	Submission
Cumulative Project 6: How Can Business Software Be Useful?	Submission
Unit 6 Discussion 1	Discussion
Unit 6 Discussion 2	Discussion
Unit 6 Quiz	Multiple Choice

Unit 7: The World of IT Apps

From business communication applications and accounting software to educational learning management systems and personal smartphone apps, the world of IT apps seemingly knows no bounds! We will discover the uses of various applications, extend our file management skills, explore the browser, improve our online search strategies, and learn where to find tech help if we need it.

What will you learn in this unit?

After studying this unit, you will be able to:

1. Describe and use software for personal and business tasks
2. Develop file management techniques
3. Demonstrate proficiency using a browser
4. Configure a web browser using advanced settings
5. Assess the validity of online sources
6. Use search engines and search tools effectively

Unit 7 Assignments	
Assignment	Type
Lesson 01: Diverse Applications	Lesson
Lesson 02: File It Away!	Lesson
Lesson 03: Not Just for Browsing Anymore	Lesson
Lesson 04: Advanced Browsing	Lesson
Lesson 05: Evaluating Internet Content	Lesson
Lesson 06: Just Searching	Lesson
Critical Thinking Questions	Submission
Activity: How Can I Use a Browser to Locate Information?	Submission
Cumulative Project 7: How Do I Know If a Source Is Credible?	Submission
Unit 7 Discussion 1	Discussion
Unit 7 Discussion 2	Discussion
Unit 7 Quiz	Quiz

Unit 8: Programming Pro Tips

Programming is currently one of the hottest industries. Even careers that are not traditionally thought of as technical now require a basic level of programming knowledge. In this unit, you will walk through the basics of coding, beginning with the software development life cycle, and then move on to understanding how various programming languages help to solve problems. You will explore the world of algorithms, get exposure to the basic constructs of most programming languages, and even develop your own mobile app. Get ready for a jam-packed, fun-filled unit!

What will you learn in this unit?

After studying this unit, you will be able to:

1. Compare and contrast programming language categories
2. Define and recognize programming control constructs
3. Describe basic programming building blocks and concepts
4. Create a basic mobile app

Unit 8 Assignments	
Assignment	Type
Lesson 01: Problems and Solutions	Lesson
Lesson 02: Algorithm Fundamentals	Lesson
Lesson 03: Programming Basics	Lesson
Lesson 04: Mobile Apps	Lesson
Critical Thinking Questions	Submission
Activity 1: How Can I Use an Algorithm?	Submission
Final Cumulative Project: What Data Types Do I Need?	Submission
Activity 2: What Did I Get Out of This Course?	Submission
Unit 8 Discussion 1	Discussion
Unit 8 Discussion 2	Discussion
Unit 8 Quiz	Multiple Choice

Final Exam

1. Review information acquired and mastered from this course up to this point.
2. Take a course exam based on material from the **second half** of the course (**Note:** You will be able to open this exam only one time.)

Final Exam Assignments	
Assignment	Type
Final Exam	Multiple Choice
Final Discussion	Discussion

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1. <https://earthweb.com/google-docs-users/> ↩