

# **Principles of Information Technology 1A: Introduction**

## **Course Syllabus**

### **What you will learn in this course**

#### **Principles of Information Technology 1A: Introduction**

Develop your understanding of computers and increase your proficiency! Learn about computer hardware, Von Neumann architecture, peripherals, and maintenance as well as data management and storage options. Trace the history of operating systems and application software while also exploring network systems, administration, and troubleshooting. Finally, dive into word processing, spreadsheets, and databases to cement your knowledge of information technology!

#### **Unit 1: The Basics: Understanding Computer Hardware**

We interact with dozens of computers every day, whether we realize it or not. From smartphones to 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?**

- Identify and define the components of the Von Neumann architecture model
- Compare and contrast types of computers and their purposes
- Describe the purpose of peripherals and how to connect them to a computer
- Apply a common troubleshooting methodology to hardware problems
- Identify useful maintenance procedures

#### **Unit 2: Data and Storage**

Data is not just a technical computing term anymore. Data 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, storage devices, and how it affects you!

##### **What will you learn in this unit?**

- Define terms relating to data and understand how they affect the business world
- Understand how the binary number system relates to data
- Understand how ASCII and Unicode apply to data representation of characters
- Distinguish which data type should be used for storing particular pieces of data
- Compare and contrast different methods of storage

### **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 as well as entertain themselves. The future of software development is exciting and futuristic, 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?**

- Compare and contrast system software and application software
- Explain the purpose and features of an operating system
- Compare and contrast different types of operating systems
- Use various application software to accomplish tasks
- Identify software delivery models

### **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?**

- Identify various types of networks and explain their purposes
- Compare and contrast different ISP connections
- Understand the packet switching process
- Define and explain the functions of different pieces of network hardware
- Describe network security issues

### **Principles of Information Technology 1A Midterm Exam**

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

### **Unit 5: Word Processing**

The business and academic worlds make heavy use of word processing software. About 1.2 billion people worldwide use [Microsoft Word](#), making it the most popular word processing software. Not only does Word provide basic functionality for creating and editing documents, it also provides features such as mail merge, macros, and special templates. Get ready to learn the ins and outs of Word and how you can use it to enhance your writing!

### What will you learn in this unit?

- Define basic terminology relating to word processing software
  - Perform document-related tasks such as formatting, sharing, and saving
  - Execute text-related tasks such as styling and spacing
  - Describe how word processing software can be used in the business world to accomplish tasks
  - Insert academic features into a document such as a table of contents, endnotes/footnotes, and references
1. Word is part of the Microsoft Office package and is therefore a registered trademark of Microsoft Corporation, used with permission. 

### 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 Microsoft Excel and [Access](#).

### What will you learn in this unit?

- Understand and explain basic spreadsheet and database terminology
  - Distinguish among different types of databases
  - Create and manipulate a spreadsheet using Excel
  - Create and manipulate a database using Access
  - Explain and create simple queries using SQL
2. Excel and Access are part of the Microsoft Office package and are therefore registered trademarks of Microsoft Corporation, used with permission. 

### Unit 7: The World of IT Apps

From business communication applications to accounting software to educational learning management systems to 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?

- Identify how applications are used in businesses, schools, and homes
- Demonstrate basic file management skills
- Connect to the internet and effectively navigate it using a web browser
- Determine the credibility and reliability of online sources

- Learn and apply internet search techniques

## **Unit 8: The World of IT Careers**

With a projected 22 percent growth in IT jobs by 2020, it's no secret that the tech industry is booming. Whether it's energy, education, finance, or marketing, most industries need IT professionals to develop software, provide technical support, manage projects, design websites, and manage networks. Companies are on the lookout for employees who not only have solid tech skills but who are also dependable, hard-working, and trustworthy. Get ready to learn about your opportunities to develop these skills, and you'll soon be on your way to an exciting career!

### **What will you learn in this unit?**

- Identify how various industries use Information Technology
- Describe the duties and skills of various IT roles
- Develop and implement a plan for finding a job
- Research and locate potential job opportunities

## **Principles of Information Technology 1A Final Exam**

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units five to eight in this course – the last four units. (Note: You will be able to open this exam only one time.)