Principles of Information Technology 1B: Working with Computers Course Syllabus

What you will learn in this course

Principles of Information Technology 1B: Working with Computers

Building on the prior prerequisite course, you will gain further knowledge of information technology. Starting with an overview of programming, algorithms, and compilers, students will then learn the basics of webpage design and creating graphics. You will also explore security and cybercrime, emerging technologies, presentation software, and intellectual property laws. Finally, you will prepare for the future by discovering various careers in this field and planning your education!

Unit 1: Programming Like a Pro

Programming is one of the hottest industries currently. Even careers that are not traditionally thought of as technical are now requiring a basic level of programming knowledge. You will walk through the basics of coding, beginning with the cycle of how software gets developed, and then moving on to understanding how various programming languages can help solve certain 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?

- Identify the stages of the software development life cycle
- Describe how programming languages help solve problems
- Define and use algorithms and their basic building blocks of sequence, selection, and iteration
- Distinguish among various programming constructs such as identifiers, containers, functions, and objects
- Use drag-and-drop software to design and develop a simple mobile app

Unit 2: Web Design

Websites are very important in our current society. Businesses rely on them to market, advertise, share information, sell products, and communicate. But not all websites are created equal—some are attractive and professional while others are dull and unappealing. To make a visually appealing website or graphic, you'll need to make use of some very important design skills. In this unit, we will explore the basics of web design, web development, and SmartArt graphics.

What will you learn in this unit?

- Identify and use basic principles of image design

- Create SmartArt graphics using MS Word
- Create a storyboard and implement its design in a webpage
- Explain how websites have affected the business world
- Use HTML and WYSIWYG editors to create webpages

Unit 3: Digitally Speaking

From messenger pigeons to papyrus to paper to emails, communication sure has come a long way! We now have a range of tools at our disposal for workplace and personal communication. Let's learn how to speak digitally by exploring some of these tools. We will set up and use a Gmail account to investigate the email world. And you'll learn how to mind your netiquette!

What will you learn in this unit?

- Explain the purpose and use of various communication tools
- Describe and perform basic email functions
- Understand the use of project management tools
- Use advanced features of email

Unit 4: The Good and the Bad: Trends and Threats

With new innovations such as augmented reality, 5G, and smart devices, the future of tech has never looked so bright! But in this fast-paced, ever-changing industry, threats are equally as fast-paced and evolving. Cybercrime is rampant and many individuals and organizations are falling prey to cyberattacks. We'll learn about the specific threats that are out there, how to recognize them, and how to prevent them. And you'll learn some best practice tips along the way to keep yourself safe.

What will you learn in this unit?

- Identify and describe security threats
- Explain how different types of malware work
- Describe issues relating to internet safety
- Explain how encryption works

Principles of Information Technology 1B 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: Working Together with Info Tech

Relationships among different groups of people are important to a well-functioning business, whether it involves peers, employer/employees, or mentor/mentee relationships. Learning how to communicate, collaborate, and resolve conflict well are vital skills for working in a business

environment. IT tools can help these relationships function smoothly by meeting a variety of needs within the company.

What will you learn in this unit?

- Describe the importance of various types of relationships within the business world
- Learn and apply strategies for resolving conflict in the workplace
- Recognize the importance of leadership skills and teamwork
- Identify a variety of ways that IT can help solve a business challenge

Unit 6: The Big Presentation

Presentation software is useful as a visual aid accompaniment to a speech or lecture. Microsoft PowerPoint is the most popular type of presentation software, with more than 500 million users worldwide! In this unit we will learn basic features as well as more advanced aspects of PowerPoint that can be used in a business context. Get ready to start exploring and creating your very own PowerPoints.

What will you learn in this unit?

- Create slideshow presentations using basic features
- Insert graphical and multimedia elements into a PowerPoint
- Add transitions and animations to slides
- Utilize PowerPoint for project management purposes

Unit 7: Legal and Ethical Sides of IT

With all the data swimming around in the world, there is a great need for privacy and security. But sometimes the water gets a bit murky and legal or ethical issues surface. In this unit, we'll dive into the deep water of intellectual property and how to protect it. We will also sail into issues of confidentiality, integrity, and availability, with the goal of understanding how to behave securely, legally, and ethically.

What will you learn in this unit?

- Distinguish the differences between copyrights, patents, and trademarks
- Describe the consequences of copyright infringement, piracy, and plagiarism
- Summarize confidentiality, integrity, and availability concerns relating to data
- Discuss ethical and legal issues relating to IT

Unit 8: Pathways to Expanding IT Involvement

As you reach the end of this IT course, it is really only the beginning of your journey! Begin preparing for your future today by exploring your options for joining professional organizations, becoming involved in a computing club, giving back to your community, taking part in competitive programming, and becoming a lifelong learner. Being an IT professional is not

simply about having the right skillset, as important as that is. You also need to be a good digital citizen and be conscious of how your actions affect the wider community.

What will you learn in this unit?

- Discuss the benefits of competitive programming
- Read and understand technical material from magazines, journals, and books
- Take steps to becoming a lifelong learner
- Be a responsible digital citizen who promotes security and advocates fairness online

Principles of Information Technology 1B 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.)