

IT101 | IT Fundamentals

Course Text

No need to track down a textbook; all required content is provided upon enrollment.

Course Description

IT Fundamentals by zyBooks introduces students to the basics of information technology in a highly interactive format. Designed for accessibility and engagement, the course covers topics such as the Internet, operating systems, computer applications, web and wireless technologies, privacy, and security. It also explores societal impacts of computing, including e-commerce, online privacy, and health-related concerns like screen time. Finally, students learn about AI and its impacts on the industry and the world.

Learning Outcomes

After completing this course, students will be able to:

1. Discuss the historical evolution of computing, including key figures, milestones, and the basics of hardware and software
2. Explain the fundamentals of the Internet, web technologies, and the process of creating simple web pages using HTML, CSS, and JavaScript
3. Compare various operating systems, including their functionalities, user interfaces, and device drivers
4. Evaluate the use of computing applications such as word processing, spreadsheets, and database tools to solve real-world problems
5. Analyze the features of web and mobile applications and their impact on modern communication and information sharing
6. Apply principles of privacy and security to identify and mitigate risks such as data breaches, malware, and online scams
7. Discuss the role of information systems in organizations, including cloud computing applications and career opportunities in the field
8. Assess the societal impacts of computing, including e-commerce, cybercrime, intellectual property, and the digital divide
9. Explain the applications and ethical considerations of artificial intelligence, including machine learning and natural language processing

Course Prerequisites

There are no prerequisites for this course.

Academic Integrity Statement

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating, fabrication and academic misconduct. Failure to comply with the Academic Integrity Policy can result in a failure and/or zero on the attempted assignment/examination, a removal from the course, disqualification to enroll in future courses, and/or revocation of an academic transcript.

Course Completion Policy

In order for a course to be considered complete, **all required coursework must be attempted, submitted, and graded.** Required coursework consists of graded assignments. Any Academic Integrity Policy violations may prevent a course from being considered complete.

Assessment Types

StraighterLine courses may include any combination of the assessment types described below. Review the descriptions to learn about each type, then review the Course Evaluation Criteria to understand how your learning will be measured in this course.

Benchmarks

Benchmarks test your mastery of course concepts. You have 3 attempts, and your highest score counts.

Note: Cumulative Benchmarks (final exams) only allow 1 attempt.

Capstones

Capstones are project-based assessments that help you apply concepts to real-world scenarios. You have 2 attempts, and your highest score counts.

Checkpoints

Checkpoints are quick knowledge checks on important course concepts. All are open-book, and most have 1-3 attempts.

AI Use-Case Policies

StraighterLine Capstone assessments operate under one of three AI Use-Case Policies. These designations are selected intentionally to support learners in developing digital literacy, ethical reasoning, and authentic communication skills. Each model requires students to engage meaningfully with the course outcomes while adhering to academic standards.

Independent Work Requirement: Capstones with this designation must be completed independently without using AI tools. The goal is for learners to showcase their own understanding and skills without AI assistance. Students are expected to generate and submit original work developed solely through their own reasoning and effort.

AI-Assisted Planning Option: Capstones with this designation may allow AI tools to support brainstorming and assessment planning. If allowed, students will be asked to document any AI assistance by noting how it informed their work. Documentation must be included within the assignment or in a designated reflection field. Examples include describing how an AI tool helped organize an outline, generate ideas, or surface sources for further exploration.

AI-Integration Requirement: Capstones with this designation require AI tools as part of the learning process. Students will be asked to reflect upon their AI interactions and AI contributions to the assessment. Reflections must include which tools were used, how they were used, and what insights students gained from the process. This promotes transparency, ethical use, and metacognitive skill-building.

Course Evaluation Criteria

Your score provides a percentage score and letter grade for each course. A passing percentage is 70% or higher.

There are a total of 1000 points in the course:

Assessment	Points	Learning Outcomes
Checkpoint 1: History and Basics	84	1
Checkpoint 2: Hardware and Software	84	1
Checkpoint 3: The Internet and Web	84	2
Checkpoint 4: Operating Systems	84	3
Checkpoint 5: Computer Applications	84	4
Checkpoint 6: Web/Mobile Apps	84	5
Checkpoint 7: Privacy	84	6
Checkpoint 8: Security	84	6
Checkpoint 9: Information Systems	84	7
Checkpoint 10: More Societal Issues	80	8
Checkpoint 11: Computing Concepts	84	9
Checkpoint 12: Artificial Intelligence	80	10
Total	1000	

Course Roadmap

This roadmap provides an overview of the checkpoints and lessons covered in this course.

Checkpoint 1: History and Basics

- Brief history
- Historical figures in computing
- Programming (general)
- Computers all around us
- Representing information as bits
- Naming Numerous Bits
- Why programming

Checkpoint 2: Hardware and Software

- Basic hardware
- Cache, memory, drive
- Types of computers
- Common input devices
- Common output devices
- Moore's Law
- Hardware trends
- Programming: Machine language
- Programming: Assembly language
- Programming: High-level language
- A brief introduction to Python
- Case study: Modern mouse innovations

Checkpoint 3: The Internet and Web

- Internet basics
- IP addresses
- Home networking
- Cellular networks
- Web basics
- Web search engines
- Web search tips
- Domain names and URLs
- Setting up a website
- HTML
- CSS
- JavaScript
- Case Study: Web accessibility

Checkpoint 4: Operating Systems

- OS basics
- Evolution of operating systems
- OS stories
- Best practices for OS use
- Device drivers
- Case study: Apple

Checkpoint 5: Computer Applications

- Word processing basics
- Spreadsheet basics
- Presentation app basics
- Database basics
- SQL basics
- Audio player apps
- Video player apps
- PDF viewer
- Compression
- Computer graphics
- Creating and editing digital media
- Troubleshooting
- Case study: Microsoft 365

Checkpoint 6: Web/Mobile Apps

- Video
- Streaming
- Wikipedia
- Social networking
- Email basics
- Email issues
- Text messages
- Blogs
- Case study: Smart Home Integration and Amazon Alexa

Checkpoint 7: Privacy

- Users leave footprints
- Users aren't anonymous
- Information Is valuable
- Someone could listen
- Sharing releases control
- Search is improving
- Online is real
- Case study: Facebook's facial recognition system

Checkpoint 8: Security

- Security basics
- Viruses and malware
- Antivirus software and firewalls
- Account security
- Internet scams and spam
- Cryptography
- Digital certificates
- Denial of service (DoS) attacks
- Case study: WannaCry cyberattack

Checkpoint 9: Information Systems

- Internet basics
- IP addresses
- Home ne

Checkpoint 10: More Societal Issues

- Defining information systems
- Information system development
- Information systems career paths
- Cloud computing applications
- More on cloud computing
- Case study: Workday Human Resources Information System

Checkpoint 11: Computing Concepts

- Computational artifacts

- Computational problem solving
- Collaboration
- Abstraction in computing
- Computer models and simulations
- Large data sets
- Data visualization

Checkpoint 12: Artificial Intelligence

- History of AI
- AI basics
- Generative AI and LLMs
- AI ethics
- Future of AI
- Case study: Watson for Oncology

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