

## TEK2KAREER

### Fundamentals of Computers, Digital Literacy & Computer Science 101

#### Technology Foundations Certificate

**Program Level:** Beginner / Foundational

**Delivery Format:** Instructor-Led Classroom, Live Online, or Hybrid

**Duration:** 10 Weeks

**Schedule:** 2 Days per Week • 3 Hours per Session

**Total Instructional Hours:** 60 Hours

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#### Program Overview

Technology has become an essential part of everyday life and nearly every profession. Whether using a computer at work, accessing online services, collaborating through cloud platforms, developing software, or interacting with connected vehicles, digital literacy and foundational technology skills are increasingly expected across industries.

The **Technology Foundations Certificate** provides students with a practical introduction to modern computing, digital technologies, computer science fundamentals, artificial intelligence, productivity software, web development, databases, programming, cybersecurity, mobile technologies, networking, and connected systems.

Designed for beginners with little or no prior technical experience, this instructor-led program combines classroom instruction, hands-on laboratories, demonstrations, real-world examples, and guided projects to help students develop confidence using technology while building a strong foundation for continued learning.

The program also serves as the entry point into TEK2KAREER's advanced technology certificate programs.

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#### Program Objectives

Upon successful completion of this program, students will be able to:

- Operate desktop computers, laptops, tablets, and smartphones confidently.
- Navigate Windows, macOS, Linux, Android, and iOS at a foundational level.
- Manage files, folders, storage devices, and cloud storage.

- Use Microsoft Office and Google Workspace productivity applications.
  - Communicate professionally using modern digital collaboration tools.
  - Explain how computers, hardware, software, and operating systems work together.
  - Understand Internet, web, and cloud computing fundamentals.
  - Create and style a simple static website using HTML and CSS with introductory JavaScript.
  - Understand fundamental database concepts and write basic SQL queries.
  - Apply computational thinking and structured problem-solving techniques.
  - Develop introductory programs using Python and Java.
  - Configure and troubleshoot basic networking and connected devices.
  - Understand cybersecurity fundamentals and safe technology practices.
  - Use Artificial Intelligence responsibly as a productivity and learning tool.
  - Explain the fundamentals of infotainment systems, connected vehicles, Android Auto, Apple CarPlay, and Over-the-Air (OTA) software updates.
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## **Who Should Enroll**

This program is ideal for:

- Career Changers
- Adult Learners
- Workforce Development Participants
- High School Graduates
- College Students
- Beginners exploring technology
- Future Software Quality Assurance Engineers
- Future Software Engineers
- Future AI Professionals
- Future Product Managers
- Future Help Desk Professionals
- Future Systems Engineers
- Future Automotive Software Engineers

- Future Infotainment Engineers
  - Future Software Defined Vehicle (SDV) Engineers
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### **Skills Students Will Develop**

Students will build practical skills in:

#### **Digital Literacy**

- Computer Fundamentals
  - File Management
  - Digital Communication
  - Productivity Software
  - Cloud Storage
  - Digital Collaboration
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#### **Computer & Technology Fundamentals**

- Computer Hardware
  - Computer Software
  - Operating Systems
  - Storage Devices
  - Peripheral Devices
  - Mobile Computing
  - Connected Devices
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#### **Internet & Web Technologies**

- Internet Fundamentals
- Browsers
- Search Engines
- URLs

- Domains
  - Websites
  - HTML
  - CSS
  - Introductory JavaScript
  - Website Publishing Concepts
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### **Productivity & Workplace Technology**

- Microsoft Word
  - Microsoft Excel
  - Microsoft PowerPoint
  - Google Docs
  - Google Sheets
  - Google Slides
  - Gmail
  - Microsoft Outlook
  - Microsoft Teams
  - Zoom
  - Google Meet
  - PDF Tools
  - Electronic Signatures
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### **Artificial Intelligence**

Students learn responsible AI usage including:

- AI Fundamentals
- Prompt Engineering
- AI Ethics
- AI Productivity
- AI Research

- AI-Assisted Learning
- AI-Assisted Coding
- AI-Assisted Troubleshooting
- Information Verification

AI is integrated throughout the course rather than taught as a standalone module.

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## **Data & Databases**

Students are introduced to:

- Data vs Information
- Records
- Tables
- Relational Databases
- Primary Keys
- SQL Fundamentals

Topics include:

- SELECT
  - INSERT
  - UPDATE
  - WHERE
  - ORDER BY
  - COUNT
  - Aggregate Functions
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## **Cybersecurity & Digital Safety**

Topics include:

- Password Security
- Multi-Factor Authentication (MFA)

- Phishing Awareness
  - Online Privacy
  - Digital Footprints
  - Safe Browsing
  - Responsible Technology Use
  - Digital Citizenship
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## **Mobile & Connected Technologies**

Students explore:

- Android
  - iPhone (iOS)
  - Tablets
  - Smartwatches
  - Bluetooth
  - Wi-Fi
  - Mobile Applications
  - Permissions
  - Cloud Synchronization
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## **Networking Fundamentals**

Topics include:

- Wi-Fi
- Ethernet
- Bluetooth
- Hotspots
- Cellular Networks
- DNS (Conceptual)
- HTTP & HTTPS
- IP Addressing (Conceptual)

- APIs (Introduction)
  - Network Troubleshooting
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### **Connected Vehicles & Infotainment**

Students gain an introduction to:

- Automotive Infotainment Systems
  - Navigation Systems
  - Digital Instrument Clusters
  - Bluetooth Integration
  - USB Connectivity
  - Android Auto
  - Apple CarPlay
  - Telematics
  - Over-the-Air (OTA) Updates
  - Connected Vehicle Ecosystems
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### **Computer Science Foundations**

Students learn:

- Computational Thinking
  - Algorithms
  - Logic
  - Flowcharts
  - Pseudocode
  - Problem Solving
  - Binary Concepts
  - Software Development Fundamentals
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## **Programming Foundations**

Students gain introductory experience with:

### **Python**

- Variables
- Data Types
- Input & Output
- Conditions
- Loops
- Functions
- Simple Programs
- Debugging

### **Java**

- Variables
- Classes
- Objects
- Methods
- Basic Program Structure
- Introductory Object-Oriented Programming

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## **Software & Tools Used**

Students gain exposure to a variety of commonly used software and technology tools, including:

### **Operating Systems**

- Windows 11
- macOS
- Linux (Introduction)
- Android
- iOS

### **Productivity**

- Microsoft Office

- Google Workspace

### **Browsers**

- Google Chrome
- Microsoft Edge
- Mozilla Firefox

### **Development Tools**

- Visual Studio Code
- Python
- Java Development Kit (JDK)
- DB Browser for SQLite (or SQLite)

### **Artificial Intelligence**

- ChatGPT
- Microsoft Copilot
- Google Gemini

### **Communication & Collaboration**

- Microsoft Teams
- Zoom
- Google Meet
- Gmail
- Microsoft Outlook

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### **Hands-On Learning Activities**

Throughout the program, students participate in:

- Instructor-Led Demonstrations
- Guided Exercises
- Hands-On Computer Labs
- AI Activities

- Technology Discussions
- Device Configuration Labs
- Website Development Labs
- SQL Practice Labs
- Python Programming Labs
- Java Programming Labs
- Networking Exercises
- Cybersecurity Simulations
- Mobile Device Configuration
- Infotainment Demonstrations
- Troubleshooting Scenarios
- Integrated Technology Project

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### **Final Integrated Project**

Students apply the knowledge gained throughout the course by completing an integrated technology project.

Examples include:

- Personal Portfolio Website
- Technology Information Website
- Digital Safety Website
- Student Technology Showcase
- Expense Tracker (Introductory)
- Vehicle Maintenance Tracker (Introductory)

Projects incorporate multiple concepts including HTML, CSS, SQL concepts, Python, AI-assisted development, and professional documentation where appropriate.

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### **Assessment Methods**

Student progress is evaluated through a combination of:

- Classroom Participation

- Hands-On Labs
  - Weekly Knowledge Checks
  - Homework Assignments
  - Practical Exercises
  - Mini Projects
  - Integrated Final Project
  - Final Presentation
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### **Learning Pathways**

Successful completion of this program prepares students for advanced TEK2KAREER certificate programs, including:

- Software Quality Assurance & Automation
  - Computer Science & Software Engineering
  - Artificial Intelligence & Machine Learning
  - Help Desk & Technical Support
  - Product Management
  - Systems Engineering
  - Automotive Software Engineering
  - Infotainment Engineering
  - Software Defined Vehicles (SDV)
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### **Program Outcome**

Upon completion, students will have developed a strong foundation in modern computing, digital literacy, introductory programming, web development, artificial intelligence, cybersecurity, productivity technologies, networking, and connected systems. Graduates will be prepared to confidently use technology in personal and professional environments while establishing the knowledge and practical skills necessary to continue into more advanced technology education and specialized career pathways within the TEK2KAREER ecosystem.