

IT Fundamentals and Data Analytics

Curriculum Overview

- **Weeks 1-6:** IT Fundamentals Tech Career Pathway (IT Fundamentals & Google IT Support)
 - **Weeks 7-18:** Data Analytics Program
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Week 1-2: Foundation & Hardware

Course 1: Technical Support Fundamentals

Week 1 Focus:

- Computer hardware components (CPU, RAM, storage, motherboards)
- How computers work and boot process
- Binary and data representation
- Basic troubleshooting methodology

Week 2 Focus:

- Operating system basics and installation
- Software fundamentals and installation
- Customer service skills for IT support
- Documentation and ticketing systems
- Complete Course 1 assessments

Week 3-4: Networking & Systems

Course 2: Computer Networking + Course 3: Operating Systems

Week 3 Focus:

- Network protocols and the OSI model
- TCP/IP, DNS, and DHCP
- Routing and switching basics
- Wireless networking concepts

Week 4 Focus:

- Windows and Linux operating systems

- File systems, permissions, and security
- Command line interfaces (Windows CMD/PowerShell, Linux Bash)
- Process management and system monitoring
- Complete Courses 2 & 3 assessments

Week 5-6: Administration & Security

Course 4: System Administration + Course 5: IT Security

Week 5 Focus:

- Cloud computing fundamentals (IaaS, PaaS, SaaS)
- Directory services (Active Directory)
- Network services and infrastructure
- Data backup, recovery, and disaster planning

Week 6 Focus:

- Cybersecurity threats and vulnerabilities
- Cryptography and encryption basics
- Network security and firewalls
- Incident response procedures
- Risk assessment and security policies
- Complete final courses and capstone project

Weeks 7-18: Data Analytics Program

Weeks 7-11: Power BI – Data Visualization (5 weeks) Power BI Interface & Data Cleaning (Power Query)

- Data Modeling, DAX Calculations
- Advanced Data Modeling Concepts
- Dashboard & Report Creation
- Publishing & Security in Power BI Service
- Integration with other tools (e.g., Excel, SQL)
- Real-World Use Cases & Best Practices
- **Project:** Designing Sales Performance Dashboards

Weeks 12-13: Data Analytics Foundations & Excel

- Introduction to Data Analytics (roles, industries, pipeline)
- Excel for Analysis: Pivot Tables, Advanced Formulas (VLOOKUP, INDEX/MATCH), Power Query

- Data Storytelling & KPIs
- **Project:** Sales Data Analysis & Dashboard Creation in Excel

Weeks 14-15: SQL for Data Analysts

- SQL Basics: SELECT, WHERE, GROUP BY, HAVING
- Joins & Subqueries, Aggregations & Window Functions
- Data Cleaning: CASE, COALESCE, CTEs
- SQL-Power BI Integration
- **Project:** Building SQL Queries for Business Insights

Weeks 16-17: Tableau – Visualization & Analytics

- Introduction & Data Connection
- Data Preparation in Tableau
- Chart Creation (Basic & Advanced Visuals)
- Dashboard Design & Interactivity
- **Project:** HR Analytics Dashboard

Week 18: Capstone & Certification Prep

- **Capstone Project:** End-to-End BI Project (Excel, SQL, Power BI, Tableau)
 - Business Problem Identification & Data Sourcing
 - Full Data Pipeline (Cleaning → Analysis → Dashboard)
 - Project Presentation to Stakeholders
- **Certification & Job Readiness:**
 - Microsoft Power BI Data Analyst (PL-300) Certification Prep
 - Tableau Desktop Specialist Exam Prep
 - Portfolio, Resume Building & Mock Interviews

Professional Certifications Available

1. Microsoft Power BI Data Analyst (PL-300) Requirement **Exam Price: \$165**

Prerequisites: Completion of Power BI curriculum modules

Benefits:

- Validates expertise in Power BI data modeling and visualization
- Recognized globally by employers seeking BI professionals
- Enhances career prospects in data analytics and business intelligence
- **Exam Topics:** Data preparation, modeling, visualization, analysis, and deployment

2. Google IT Support Professional Certificate Requirement

Prerequisites: Basic computer literacy

Benefits:

- Comprehensive IT support foundation covering troubleshooting, networking, and security
- Recognized by leading employers including Google, Intel, and Bank of America
- Prepares for entry-level IT support roles
- **Curriculum Includes:** Technical support fundamentals, networking, operating systems, system administration, and IT security

2. Tableau Desktop Specialist Certification Optional Exam Price \$100

Prerequisites: Completion of Tableau curriculum modules

Benefits:

- Industry-recognized credential for data visualization professionals
- Demonstrates proficiency in Tableau's core functionality
- Valuable for roles in data analysis and business intelligence
- **Exam Topics:** Data connections, field and chart types, filters, sorting, groups, sets, and basic calculations

3. Microsoft Excel Expert Certification (MO-201) Optional Exam Price \$100

Duration: 2-3 months preparation

Prerequisites: Intermediate Excel knowledge

Benefits:

- Validates advanced Excel skills essential for data analysis
- Recognized across industries for data manipulation and analysis expertise
- Complements Power BI and other analytics certifications
- **Exam Topics:** Advanced formulas, data analysis tools, pivot tables, macros, and data visualization