



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Applied Communications Technology Fundamentals

Physical, Mathematical, Computer and Life Sciences / Information Technology and Computer Sciences

Unit Standard 259142 · NQF Level 4 · 8 Credits · 5 Days

COURSE OVERVIEW

This course provides a foundational understanding of applied communications technology, enabling learners to select, use, and manage communication tools effectively in a business environment. It covers key concepts such as data transmission, network protocols, and digital communication platforms, ensuring participants can apply these technologies to enhance organizational communication.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Information Technology and Computer Sciences
Unit Standard	259142
Accreditation	SAQA Accredited · NQF Level 4 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Describe the principles and components of communications technology systems.
- Apply appropriate communication technologies for different business scenarios.
- Analyze the advantages and limitations of various communication channels.
- Implement basic troubleshooting techniques for common communication technology issues.
- Demonstrate understanding of data transmission standards and network protocols.

WHO SHOULD ATTEND

- This course is designed for administrative staff, junior IT support personnel, and any professionals seeking to improve their competency in using communications technology for business purposes.

COURSE OUTLINE

Day 1: Introduction to Communication Systems and Technologies

- Overview of communication systems: transmitter, channel, receiver
- Analog vs. digital communication
- Modulation techniques: AM, FM, PM
- Demodulation and signal recovery
- Bandwidth, data rate, and noise fundamentals
- Introduction to transmission media: wired and wireless
- Standards and regulatory bodies in telecommunications
- Safety practices in handling communication equipment

Day 2: Wired and Wireless Transmission Media

- Twisted pair: categories, shielding, and connectors
- Coaxial cable: impedance, connectors, and applications
- Fiber optics: principles, types, and connectors
- Wireless propagation: reflection, refraction, diffraction
- Antenna types: dipole, parabolic, Yagi-Uda
- RF and microwave bands and their uses
- Signal attenuation, distortion, and noise
- Impedance matching and standing wave ratio (SWR)

Day 3: Communication Protocols and Networking Fundamentals

- OSI model layers and their functions
- TCP/IP protocol suite: IP, TCP, UDP, HTTP, FTP
- IP addressing: IPv4 and IPv6, subnetting
- Routing basics: static and dynamic routing
- Network topologies: star, bus, ring, mesh
- Network devices: routers, switches, hubs, modems
- Ethernet standards and cabling
- Introduction to wireless LAN (Wi-Fi) standards

Day 4: Communication Systems Integration and Troubleshooting

- System integration: connecting transmitters, receivers, and antennas
- Configuring IP addresses and subnet masks on devices
- Using ping, traceroute, and iperf for network testing
- Spectrum analyzers and power meters for RF measurements
- Troubleshooting common issues: cable faults, interference, misconfiguration
- Link budget analysis and signal strength calculations
- Documentation and reporting of test results
- Preventive maintenance of communication equipment

Day 5: Applied Communication Projects and Industry Standards

- Project planning: requirements, design, and implementation
- Case studies: point-to-point link, LAN setup, wireless network
- Industry standards: SANS, ETSI, FCC regulations
- Quality of Service (QoS) and performance metrics
- Emerging technologies: 5G, IoT, satellite communications

- Environmental and safety considerations
- Professional ethics and customer communication
- Course review and assessment

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **8 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 16,900.00	R 16,900.00
1	In-House	R 22,000.00	R 22,000.00
1	On-Campus (Pretoria)	R 25,400.00	R 25,400.00

UPCOMING SESSIONS

No sessions are currently scheduled. Please contact us to arrange a session at a time and location that suits your team.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 259142) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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