

Telecommunication System Engineering

Los Angeles (USA)

1 - 12 September 2025

UK Traininig

PARTNER



Telecommunication System Engineering

Code: GC28 From: 1 - 12 September 2025 City: Los Angeles (USA) Fees: 10800 Pound

Course Introduction:

The "Telecommunication System Engineering" course provides a comprehensive and technical understanding of the principles and modern technologies of telecommunications. This course aims to equip participants with the knowledge and skills necessary to design, operate, and maintain telecommunication systems efficiently and effectively.

Course Objectives of Telecommunication System

- Basic Telephony.
- Switching in an Analog Environment.
- Introduction to Transmission for Telephony.
- The Design of Long-Distance Links.
- Digital Transmission Systems.
- Digital Switching and Networks.
- Introduction to Data Communications.
- Data Networks.
- Network Management.

Course Outlines of Telecommunication system

Day 1

Basic Telephony

- The Simple Telephone Connection.
- Sources and Sinks.
- Telephone Networks: Introductory Terminology.
- Essentials of Traffic Engineering.
- Bases of Network Configurations.
- Variations in Traffic Flow.
- Quality of Service.

Day 2

Switching in an Analog Environment

- Numbering, One Basis of Switching.
- Concentration and Expansion.
- Basic Switching Functions.
- Introductory Switching Concepts.
- Grading.



- The Crossbar Switch.
- System Control.
- Telephone Traffic Measurement.
- Dial-Service Observation.

Day 3

Introduction to Transmission for Telephony

- Purpose and Scope.
- The Three Basic Impairments to Voice Channel.
- Transmission.
- Two-Wire and Four-Wire Transmission.
- Multiplexing.
- Shaping of a Voice Channel and its Meaning in.
- Noise Measurement Units.

Day 4

The Design of Long-Distance Links

- The Bearer.
- Introduction to Radio Transmission.
- Design Essentials for Line-of-Sight Microwave System.
- Satellite Communications.
- Fiber-Optic Communication Links.

Day 5

Digital Transmission Systems

- Digital versus Analog Transmission.
- Basis of Pulse-Code Modulation.
- Development of a Pulse-Code Modulation Signal.
- PCM Line Codes.
- Regenerative Repeaters.
- Signal-to-Gaussian-Noise Ratio on Pulse-Code.
- Modulation Repeated Lines.
- PCM System Enhancements.
- Digital Loop Carrier.
- SONET and SDH.
- Summary of Advantages and Disadvantages of Digital Transmission.

Day 6

Digital Switching and Networks

- Advantages and Issues of PCM Switching When.
- Compared to Its Analog Counterpart.
- Approaches to PCM Switching.



- Digital Switching Concepts.
- The Digital Network.

Day 7

Introduction to Data Communications

- Removing Ambiguity—Binary Convention 366.
- Coding.
- Errors in Data Transmission.
- The DC Nature of Data Transmission.
- Binary Transmission and the Concept of Time.
- Data Interface—The Physical Layer.
- Digital Transmission on an Analog Channel.

Day 8-9

Data Networks

- Applications.
- Initial Design Considerations.
- Data Terminals, Workstations, PCs, and Servers.
- Network Topologies and Configurations.
- Overview of Data Switching.
- Packet Networks and Packet Switching.
- Interior Gateway Routing Protocol.
- Circuit Optimization.
- Data Network Operation.
- Protocols.
- X.25: A Packet-Switched Network Access.
- TCP/IP and Related Protocols.
- TCP/IP and Data-Link Layers 450.
- The IP Routing Function 452.
- The Transmission Control Protocol TCP.
- Brief Overview of Internet Protocol Version 6 IPV6.
- Virtual Private Networks VPNs.
- Specialized VPN Internet Protocols 476.
- Voice-Over IP.

Day 10

Network Management

- Fault, configuration, performance, security, and accounting Management.
- Survivability.
- Network Management from a PSTN Perspective.
- Network Management Systems in Enterprise Networks.
- Telecommunication Management Network TMN.



Blackbird Training Cities

Europe



Malaga (Spain)



Sarajevo (Bosnia and Herzegovina)



Oporto (Portugal)



Glasgow (Scotland)



Edinburgh (UK)



Oslo (Norway)



Anney (France)



Bordeaux (France)



Copenhagen (Denmark)



Birmingham (UK)



Lyon (France)



Moscow (Russia)



Stockholm (Sweden)
(Netherlands)



Podgorica (Montenegro)



Batumi (Georgia)



London (UK)



Istanbul (Turkey)



Amsterdam



Düsseldorf (Germany)



Paris (France)



Barcelona (Spain)



Munich (Germany)



Geneva (Switzerland)



Prague (Czech)



Vienna (Austria)



Rome (Italy)



Brussels (Belgium)



Madrid (Spain)



Berlin (Germany)



Lisbon (Portugal)



Zurich (Switzerland)



Manchester (UK)



Milan (Italy)



Blackbird Training Cities

USA & Canada



Los Angeles (USA)



Orlando, Florida (USA)



Online



Phoenix, Arizona (USA)



Houston, Texas (USA)



Boston, MA (USA)



Washington (USA)



Miami, Florida (USA)



New York City (USA)



Seattle, Washington (USA)



Washington DC (USA)



In House



Jersey, New Jersey (USA)



Toronto (Canada)

Africa



Baku (Azerbaijan)
(Thailand)



Maldives (Maldives)



Doha (Qatar)



Manila (Philippines)



Bali (Indonesia)



Bangkok



Beijing (China)



Singapore (Singapore)



Sydney (Australia)



Tokyo (Japan)



Jeddah (KSA)



Riyadh (KSA)



Dubai (UAE)



Kuala Lumpur (Malaysia)



Kuwait City (Kuwait)



Pulau Ujong (Singapore)



Jakarta (Indonesia)



Amman (Jordan)



Beirut (Lebanon)



Blackbird Training Cities

Asia



Kigali (Rwanda)



Cape Town (South Africa)



Accra (Ghana)



Lagos (Nigeria)



Marrakesh (Morocco)



Nairobi (Kenya)



Zanzibar (Tanzania)



Tangier (Morocco)



Cairo (Egypt)



Sharm El-Sheikh (Egypt)



Casablanca (Morocco)



Tunis (Tunisia)



Blackbird Training Clients



UK Training
PARTNER



Blackbird Training Categories

Management & Admin

Professional Skills
Finance, Accounting, Budgeting
Media & Public Relations
Project Management
Human Resources
Audit & Quality Assurance
Marketing, Sales, Customer Service
Secretary & Admin
Supply Chain & Logistics
Management & Leadership
Agile and Elevation

Technical Courses

Hospital Management
Public Sector
Special Workshops
Oil & Gas Engineering
Telecom Engineering
IT & IT Engineering
Health & Safety
Law and Contract Management
Customs & Safety
Aviation
C-Suite Training



BLACKBIRD
FOR TRAINING

 International House 185 Tower Bridge
Road London SE1 2UF United Kingdom

 +44 7401 1773 35
+44 7480 775526

 Sales@blackbird-training.com

 www.blackbird-training.com

