

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: GPRS Technical Overview

Code	City	hotel	Start	End	price	Language - Hours
IT-428SA	Al Khobar	Hotel Meeting	2027-04-04	2027-04-08	9950 SR	En - 25

Overview

This course has been designed to inform the student of the technical aspects of the GPRS overlay network on GSM and the main procedures and applications. It is assumed the student will have an understanding of basic mobile cellular technology.

Modules

Introduction to GSM (10 topics)

- GSM Architecture
- Mobile Station
- The BTS & BSC
- The Transcoder Rate Adaptation Unit (TRAU)
- Mobile Switching Centre (MSC)
- The Registers
- Layer Functionality & The OSI Model
- Access Methods
- TDMA Frames
- Speech Coding

General Packet Radio Service (GPRS) (12 topics)

- Evolution of Wireless Data
- GPRS Roaming
- The GSM Phase II Overlay Network
- Circuit Switched & Packet Switched

- GPRS Radio Technologies
- Cells & Routing Areas
- Attaching to a Serving GRPS Support Node
- Packet Data Protocol Context
- Data Transfer
- GPRS Terminals
- Mobile Station Classes
- Applications for GPRS

System Architecture (5 topics)

- Network Architecture
- Data Routing
- New Interfaces
- Initial Implementations
- TDMA - GPRS Physical Channel Capacity

Main GPRS Procedures (11 topics)

- Mobility Management
- GPRS Attach
- GPRS Attach Scenario
- Mobile Station Initiated GPRS Detach
- Network Initiated Detach
- Activating a PDP Context Activation
- GPRS Data Transfer
- Security Functions
- Authentication
- Ciphering
- Web Access

Radio and MS-PCUSN Interfaces (6 topics)

- Packet Logical Channels

- System Information Type 13
- Network Control
- Packet Traffic Channels
- RLC/MAC Block Structure
- Channel Coding Schemes

MS to SGSN Interface (5 topics)

- Logical Link Control (LLC)
- GPRS Ciphering Environment
- Temporary Logical Link Identifier (TLLI)
- Mobility Management
- GPRS Attach Procedure

PCUSN – SGSN Interface (4 topics)

- The Protocol Stack for Gb Interface
- PDU Transmission
- Flow Control Procedures
- Modes of Operation

SGSN – GGSN Interface (5 topics)

- GPRS Tunnelling Protocol (GTP)
- GTP Identities
- Roaming & Wireless VPNs
- PDP Context the SGSN role
- Transparent & Non-Transparent Access

Physical Layer Performance (4 topics)

- Coverage
- Capacity
- High-Bit Rates

- Performance Enhancements

Future Development (4 topics)

- HSCSD
- Enhanced Data Rate for GSM Evolution (EDGE)
- E-GPRS
- UMTS/3G

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

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