4G Network Fundamentals:

A Preparatory Course

For

5G Network

Training Programme
by
Faculty of Engineering
Multimedia University

Overview

Why study 4G?

Since 2010, operators worldwide have started deploying 4G mobile networks. Studying 4G remains just as relevant now as it was 10 years ago.

Firstly, the technology behind 5G is based on those of 4G. The access network eUTRAN and the Evolved Packet Core for example, both introduced with the 4G architecture, will remain substantially the same in a 5G network system. As a result, mastering the technology behind 4G is very important in order to understand 5G.

Furthermore, an operator deploying a new-generation system relies on part of its existing network and gradually upgrades its equipment. 4G will therefore still be around for a while until 5G is 100% implemented.

By mastering the key concepts of 4G, you can be ready for the next chapter in mobile networking and the jobs of the future.

How is the network architecture designed? What are the protocols used? How is a user's security of data guaranteed?

If you are interested in understanding mobile networks and delving into the world of protocols and architectures, we invite you to enroll in this course.

For those who are interested to learn network planning and capacity dimensioning, you can also enroll in other courses: "4G and 5G Cellular Network Planning, Deployment, and Optimization" and "5G Radio Network Planning, Deployment, and Optimization".

Objective

At the end of this course, you will be able to:

- Describe 4G network architecture and functions
- Analyze the internal exchanges and protocols used in a 4G network
- Identify the transport and control functions in a 4G network

Target Audience

Engineers who would like to venture into the field of cellular communication networks

Prerequisite

Understanding of general engineering principles and communication network concepts and terms.

Training Methodology

Classroom, case studies and exercises.

Course Duration

2 days.

Content/Outline

1. 4G Network Architecture Overview

    1a. Network Nodes in the Data Plane

    1b. Network Nodes in the Control Plane

2. Security Procedures

    2a. Network Attachment

    2b. Authentication

3. Radio Interface

    3a. Resource Blocks

    3b. Packet Allocation

4. Management of Data Flows

    4a. Encapsulation and Tunneling

    4b. GTP Protocol

Course Instructors

Dr. Foo Yee Loo

Dr Foo Yee Loo is a lecturer from the Faculty of Engineering, Multimedia University. He holds a PhD in Engineering from Tokyo Institute of Technology, and specializes in wireless communications.

Administrative Details

Programme Logistics

Duration: 2 days

Date:
Please refer to the updated dates at https://www.mmu.edu.my/foe/short-courses/

Registration deadline:
Please refer to the updated dates at https://www.mmu.edu.my/foe/short-courses/

Your Investment

Condition		Price per Pax
Regular Fee	Students / MMU Alumni	RM500
	Public	RM800
	Public (Group >5 pax)	RM600
Early Bird Fee	Students / MMU Alumni	RM300
	Public	RM600
	Public (Group >5 pax)	N/A

Method of Payment

Please make payment via bank transfer only. Account details is as below:

Account name: Unitele Multimedia Sdn Bhd
Account number: 86-0090180-2
Bank: CIMB Islamic Bank Berhad

Payment must be made by the registration deadline.

Refund and Cancellation

Any refunds will be processed in 60 days. Should there be any cancellation, it may be due to the organizer not getting the minimum participants or the participant failing to attend the workshop due to unavoidable reason.

Disclaimer

Faculty of Engineering, Multimedia University reserves the right to change the instructors, date and to vary/cancel the programme should unavoidable circumstances arise. All

effort will be taken to inform participants of the changes. Upon submission of the registration form, you are deemed to have read and accepted the terms.

Enquiries
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Registration Form

To register, please visit this link: https://forms.gle/VGDYqVCAbJT9RJpg9