

# ONLINE SHORT COURSE ON HIGH FREQUENCY RADIO COMMUNICATION

Online Platform BLACKBOARD COLLABORATE ULTRA



17-19 November 2020

# **SYNOPSIS**

Before the first communications satellites were launched in the 1960s, high-frequency (HF) radio was the principal means to communicate beyond the horizon. Satellite links proved to be more reliable and over time HF was relegated to backup and disaster-recovery roles, with the military as the primary user. With the introduction of adaptive radio technology, there is a resurgence in HF radio making it reliable and low cost alternative to satellite. Today, HF radio is used by the military, amateur radio, aircraft, utilities, the oil and gas industry, short wave broadcast stations and the government agencies. The course will explain the various components that make up satellite communication system covering the propagation of signals, antennas, transmitters, receivers and signal processing.

## **COURSE CONTENTS**

- · Radio propagation: ground wave and sky wave.
- Frequency prediction and planning
- Radio systems structure.
- Antenna types
- · Radio system setup and verifications.
- · Analog voice communications.
- · Data communications: modulation and channel coding.
- · Data formats for commercial and military applications
- · Adaptive link establishment (ALE) and selective call (SELCAL)
- Spread spectrum communications

### **FACILITATOR**



ASSOC, PROF, DR AHMAD ZURI BIN SHA'AMERI obtained his B. Sc. in Electrical Engineering from the University of Missouri-Columbia, USA in 1984, and M. Eng. Electrical Engineering and Ph D both from UTM in 1991 and 2000 respectively. He was the Head of the Microelectronic and Computer Engineering (MICE) Dept

**PREREQUISITE** 

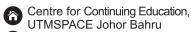
Minimum SPM holder with 5 years

experience in the related fields

and currently the Academic Coordinator for the DSP Lab. Faculty of Electrical Engineering, UTM. His research interest includes signal theory, signal processing for radar and communications, signal analysis and classification and information security. The subjects taught at both undergraduate and postgraduate levels includes digital signal processing, advance digital signal processing, and advance digital communications. He has also conducted short courses for both government and private sectors. At present, he has published 160 papers in his areas of interest at both national and international levels in conferences and journals.



IN-HOUSE Courses can be designed in accordance with organizational requirements.



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