

School of Professional and Continuing Education (SPACE)

# SHORT COURSE IN SATELLITE COMMUNICATION



## **₽** LEARNING OUTCOME

- 1. Acquire the fundamental knowledge in satellite communication.
- Provide an overview of satellite communication and its basic components.
- 3. Awareness of present day application and future development.

# **I** COURSE CONTENT

- Overview of satellite communications
- ▶ Satellite orbits
- ▶ Satellite subsystems
- ► Telemetry, tracking, command and monitoring (TTC&M)
- ▶ Communication subsystems
- ▶ Satellite communication RF link analysis
- ▶ Propagation effects and their impact on satellite-earth links
- ▶ Low earth orbit and non-geostationary satellite systems
- Earth-space propagation: Recommendation ITU-R P. 618

# **UTMSPÅCE**

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



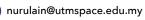
Centre for Professional Development UTMSPACE Johor Bahru



07-5318044 / 019-7773667 (Ms. Nurul Ain)



07-520 5725





### **SYNOPSIS**

A communications satellite is an artificial satellite that relays and amplifies radio telecommunications signals via a transponder; it creates a communication channel between a source transmitter and a receiver at different locations on Earth. Communications satellites are used for television, telephone, radio, internet, navigation and military applications. Many satellites are placed in geostationary orbit 22,236 miles (35,785 km) above the equator, so that they appear stationary at the same point in the sky. Therefore, the satellite dish antennas of ground stations can be aimed permanently at that spot and do not have to move to track it. Due to the curvature of the Earth, the high frequency radio waves used for telecommunications links travel by line of sight are obstructed. Thus, a communication satellites serves to relay the signal around the curve of the Earth allowing communication between widely separated geographical points. The course will explain the various components that make up satellite communication system covering the propagation of signals, antennas, transmitters, receivers and signal processing. Besides in-class lectures at UTMSPACE facilities, participants will also be exposed to lab work, case study with presentation and site visits. Lecturers who conducted this program have the necessary experience to deliver the material relating theory with practice.

#### FACILITATOR



Assoc. Prof. Dr. Jafri Bin Din obtained his Bachelor of Science in Electrical Engineering at Tri-State University, U.S.A in 1988 and PhD in Electrical Engineering: Radio Wave Propagation at UTM in 1997. At present, he is the Director of the Wireless Communication Center (WCC) UTM. His research interest includes Issues on Reliable Communications at Frequencies Bands above 25 GHz in the Tropics, Radio wave Propagation studies for Satellite Communications and Point-to-point Microwave Link, High Altitude

Platform Station (HAPS): Implementation Issues in Malaysia and Comparative Study of Rain Attenuation and Fade Duration at Frequencies above 10 GHz in Malaysia and Hungary. He has published 140 papers in his research areas in the national and international conferences and journals.

REGISTRATION FORM To confirm your registration, please complete this form including payment.			for t	YES! Please register the following participant(s) for this course  I am interested but unable to attend.  Please put me on your mailing list		
Sila tanda (,	/) yang berkenaan Name : <b>SHORT CO</b>	OURSE IN SATELLIT	E COMMUNICAT	ΓΙΟΝ		
Date	: UTM Joho	r Bahru				
Fee	: 1590.0 Includes refreshm	<b>0</b> per pax nent, course material & Certificate	e of Attendance			
TAILS OF PARTI	ICIPANT ATTENDING THE COURSE	:		NDIC		
No.	Name of Participant	Mobile No.	Email	NRIC (for HRDF claim)	Fee (RM)	
	arate list if necessary)					
ISORSHIP : /IDUAL / COM  Organisation	Self-Sponsored  IPANY DETAILS (for issuance of invo	Company-Sponsored				
ddress	:					
Contact Person	÷		Co. Reg. No*	·		
el No.	:		*If applicable Designation	:		
ax No.	:		Email	:		
ancellations recei e not eligible for the organis	ived in writing 30 days prior to the prograr a refund. However, substitute attendees ar sers may necessitate substitutions or cance	nme are eligible for a refund, subject t re welcome. Please note that the speak illations of speakers and/or topics. As s	o a 15% cancellation fee. Cancellat kers and topics are confirmed at the such UTMSPACE reserves the right	ions received less than 14 days from the d time of printing. However, circumstances to alter or modify the advertised speakers	ate of the programme beyond the control of and/or topics.	
outhorised ignature*	:		Date	:		
lame Head of Departm	: nent / Approving Manager		Designation	:		
				Company St	Company Stamp	
<b>DE OF PAYME</b> A. Cheque or E						
Cheque No. / Bank Draft No.	:		Bank/ Branch	:		
	All crossed cheque / bank draf Account Number : 860151822	t should be made payable to Ac 8   Bank Name : CIMB Islamic E	count Name : UTMSPACE Bank Berhad   Branch : UTM :	Skudai, Johor		
3. Telegraphic	Transfer / Local Order					
Transaction Da	to .		Pafaranca Numb	har :		

YES! Please register the following participant(s)

| Terms & Conditions Apply |