PROGRAMME AGENDA - DAY 1				
Time	Module/Activity	Trainer	Duration	Learning Objectives – Participants will acquire sound understanding on:
8.30am - 9.00am	Registration		30 mins	
9.00am - 9.20am	Opening Address		20 mins	
9.20am - 9.30am	Group Photo Session		10 mins	
9.30am - 10.30am	Topic 1: Introduction To Antenna (Definition, function, network and properties of antenna)	Dr. Muhammad Ramlee Kamarudin	60 mins	Antenna function and properties such as return loss, radiation pattern, gain and others. Knowledge of antenna properties will aide understanding of antenna behaviors.
10.30am – 11.00am	Tea Break		30 mins	
11.00am – 1.00pm	Topic 2 – HF, VHF and UHF Antennas	Dr. Muhammad Ramlee Kamarudin	120 mins	The type and design of antennas for Radio Frequency (Freq , 1GHz) widely being used for Radio and Television Broadcasting and Mobile Phone
1.00pm – 2.00pm	Lunch		60 mins	
2.00pm – 3.30pm	Topic 3 – Microwave Antennas	Dr. Muhammad Ramlee Kamarudin	90 mins	The type and design of antennas for Microwave Frequency (Freq>1GHz) including WiFi, Bluetooth and WLAN.
3.30pm – 4.00pm	Tea Break		30 mins	
4.00pm – 5.30pm	Topic 3 – Microwave Antennas 2	Dr. Muhammad Ramlee Kamarudin	90 mins	Antenna design at higher frequencies for broadcasting and satellite such as parabolic antennas.
5.30pm	End of Day 1			

PROGRAMME AGENDA - DAY 2				
Time	Module/Activity	Trainer	Duration	Learning Objectives – Participants will acquire sound understanding on:
8.30am - 10.30am	Topic 4 – Theory on Antenna Measurement and recent antennas design for Body Area Network	Dr. Muhammad Ramlee Kamarudin	120 mins	The theory of antenna radiation pattern measurement and gain measurement and also introduction to advanced research works on Body Area Network
10.30am – 11.00am	Tea Break		30 mins	
11.00am - 1.00pm	Topic 5 - Antenna Simulation and Measurements • Basic antenna simulation and measurement such as S11 measurement	Dr. Muhammad Ramlee Kamarudin	120 mins	Antenna design and simulation, fabrication and measurement. This session will involve hands-on antenna measurements.
1.00pm – 2.00pm	Lunch Break		60 mins	
2.00pm – 3.30pm	Topic 6 – Introduction of Smart Antenna System	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	90 mins	Theory and introduction to smart antenna systems and understanding of different types of smart antenna system such as switched beam smart antennas and adaptive array smart antenna.
3.30pm – 4.00pm	Tea Break		30 mins	
4.00pm – 5.30pm	Topic 7 – Smart Antenna System Simulation and Measurement	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	90 mins	Smart antenna design and simulation, fabrication and measurement. This session will involve hands-on antenna measurements.
5.30pm	End of Day 2			

PROGRAMME AGENDA - DAY 3

Time	Module/Activity	Trainer	Duration	Learning Objectives – Participants will acquire sound understanding on:
8.30am - 10.30am	Topic 8 Introduction to Radio Communication systems, history and wireless data communication technologies. General terms on propagation.	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	120 mins	Introduction to Radio Communication System (RCS) and history, Wireless Data Communication Technology, frequency spectrum, and general terms on propagation.
10.30am – 11.00am	Tea Break		30 mins	
11.00am - 1.00pm	Topic 9 Propagation modes and discussion on LF, MF and VLF band use for communications.	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	120 mins	Briefly introduce on modes of propagation. Detail explanation on Ground Wave Propagation using LF, MF, and VLF band. Detail explanation on Sky Wave Propagation, signal refractions and the function ionosphere in delivering signals.
1.00pm – 2.00pm	Lunch Break		60 mins	
2.00pm – 3.30pm	Topic 10 Space Wave propagation. Factors that contribute to transmission impairment. Multipath solution.	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	90 mins	Detail explanation on space wave propagation. Discuss on transmission impairment caused by refraction, diffraction, scattering, attenuation, free space path loss, multipath etc. Introduce solution to multipath propagation.
3.30pm – 4.00pm	Tea Break		30 mins	
4.00pm – 5.30pm	Topic 11 Communication use in VHF, UHF and EHF bands. Safety issue on Radio Frequency application.	Assoc. Prof. Ir. Dr. Sharul Kamal Abdul Rahim	90 mins	VHF, UHF, SHF and EHF band use for communication. Fresnel Zones, radio attenuation and radio frequency safety precautions.
5.30pm	Programme Ends			