## Aston University Quality and Standards Committee

## Module Specification

School and Subject Group		School of Engineering and Applied Science, Electronic Engineering				
Module Code		EE402B				
Module Title		Radio Systems and Personal Communications Networks				
Module Type		Taught				
Date of introduction of r	new module	2001				
Level		7	Credit Value	10		
Programme(s) in which module is available		MSc in Telecommunications Technology				
		MRes in Photonic Network Systems				
		MSc in Telecommunications Technology (Distance Learning)				
Involvement of Other So	chools	None				
Resource Split						
Name of Module Co-orc	Jinator	X. Peng				
Name of Module Adviso	)r	I. Bennion				
Related Modules	Pre-requisites	None				
	Co-requisites	None				
	Prohibited Combina-	None				
	tions					
Minimum and Maximum Intake Sizes		None – None				
Aims of the Module						
Students will extend the	ir knowledge in fundamen	tal data communications	to radio communications	and networks		
widely adopted for modern telecommunications systems.						
Summary of Content						
<b>.</b>		1. (J)				
<b>Overview</b> Briefly introduce the topics that highlight the significance of radio communications and networks and				networks and		
their roles in supplying the needs of modern telecommunications.						
Antennas and Propagation Examine the principles and types of antennas and propagation models, including						
antenna gain nath loss propagation mechanisms line-of-sight transmission noise and fading				a.		
and the gain, pair lood, propagator modulations, and or orgin transmission, holds and having.						
Mobile Communications Technologies Explore fundamental telecommunications technologies used for mobile						
environments, covering modulation, equalization, channel coding, diversity techniques and spread spec-						
trum.						
Communication Notw	arka Dovolon on incidht i	nto a communication not	work that aupports data	tranominaian		
communication networks Develop an insight into a communication network that supports data transmission			Transmission			
bot multi-users. Define the protocol architecture that explains now vertical and nonzontal communications						
and principles of wireless networking						
and principles of witeless networking.						
Radio Communication	is Systems Introduce pra	actical radio communicatio	ons systems such as sate	ellite and mo-		
bile communications systems.						
Summary of Methods	and Frequency of	Lectures 24 hours.				
Teaching						

Summary	of	Methods	and	Frequency	of	Lectures 24 hours.
Teaching						
						Tutorials 3 hours.
						Laboratory 9 hours

Summary of Methods of	Assessment				
Assessment Type	Status	%	Requirements		Due
Coursework	Compulsory	10.0	ASSIGNMENT.	The objective of the assig	gn- 07 Jan 2010
			ment is to resea	rch a contemporary topic	in
			advanced comm	unications systems. The	re-
			port should sho	w an understanding of t	he
			principles and te	echnical background of t	he
			topic, and acquir	re knowledge of its applic	ca-
			tion areas.		
Formal Examination	Compulsory 7	70.0	Final Examinatio	n. 2hr formal examination	16 Dec 2009
Laboratory	Compulsory 2	20.0	Lab Report. A	ssessment of this praction	cal 03 Dec 2009
			work is based on	4 laboratory experiments	in-
			cluding networki	ng configuration, through	out
			measurement, s	ignal quality measureme	nt,
			and WLAN plann	ling.	
Module Outcomes - wha	t the student should ga	ain from	successful	Learning and Teachin	ig and Assessment
completion of the module	:			Strategies to enable out	comes to be achieved
				and demonstrated	
				Learning and Teach-	Assessment Methods
				ing Methods	
A. Kr	owledge and Understar	nding		-	
the mechanisms by which	ch radio wave propagat	ion occ	urs and an	Laboratory, Lectures.	Coursework, For-
appreciation of the limitin	g factors in radio wave	utilisatio	on for com-	Tutorials	mal Examination.
munications	-				Laboratory
	B. Intellectual Skills				
	C. Professional Skills				
apply their knowledge of	the principles underlying	g moder	rn data net-	Laboratory, Tutorials	Coursework, For-
works					mal Examination,
					Laboratory
	D. Transferable Skills				,
Please provide either or b	ooth of:				
(i) Introductory Learning	Resources				
(ii) Core Texts					
		1.	W. Stallings, "Wire	eless Communications and	d Networks", Pren-
			tice Hall, 2nd ed.,	2001.	
			<b>T D</b> ( ()		5
		2.	I. Rappaport, "	Nireless Communications	s: Principles and
			Practice", Prentic	e Hall, 2nd ed., 2002.	
		3.	D. C. Green, "R	adio Communication". L	ongman. 2nd ed.
			2000.		J, <u></u> Ju,
		4.	D. Tse and P. Vis	wanath, Fundamentals of	Wireless Commu-
			nication, Cambrid	lge, 2005.	
		5		bilo Rodio Notworko" la	hn Wilov & Sono
		5.	D. T. Walke, IVIC	JUILE RAULO INELWORKS, JO	and whey a SUNS,
			∠nu <del>c</del> u, ∠002.		
		6.	S. Haykin and M.	Moher, Modern Wireless	Communications,
			Prentice Hall, 200	)5.	
		7.	B. Forouzan,	Data Communications	and Networking,
			McGraw-Hill, 4th	ed., 2006.	
		R	A S Tanenhaum	Computer Networks Pre	entice Hall 4th ed
		0.	2003		
			2000		
		9.	F. Halsall, Multir	nedia Communications,	Applications, Net-
			works, Protocols	and Standards, Addison-W	Vesley, 2001.
Reading Lists		Attac	hed		
Specification completed b	by:	Dr. Jo	ohn A.R. Williams		
Date		22-Ap	pr-2009		

Date module approved by Teaching Commit-	
tee(s)	
Date module approved by School Board(s)	

RPS/SJD/DLL/Module Specification/24 March 2003(f) SJD/LAP/Module Programmes