COURSE INFORMATION

Department/ Faculty:	Department of Science, Mathematics and Creative Multimedia Education, Faculty of Social Sciences and Humanities	Page:	1 of 7
Course code:	SPPP 1032	Academic Session/Semester:	20202021/1
Course name:	Telecommunications and Computer Network	Pre/co requisite (course name and code, if applicable):	Null
Credit hours:	2		

Course Synopsis	This is an introductory course in telecommunications and computer network. It provides the foundation for telecommunications technologies, Internet applications & infrastructures, focusing on data communications, networking and computer hardware and software, network topology, analysis and design of networking applications in organizations and basic management of telecommunications networks. Students will be introduced to the LANs, WANs, social and ethical issues related to web resources. At the end of the course students should be able to demonstrate their understandings by using Internet applications for teaching and learning, awareness of ethical and social issues related to web resources. In addition, students will gain practical experience by studying a physical network using various networking applications.			
Course coordinator (if applicable)				
Course lecturer(s)	**Name**	**Office**	**Contact no.**	**E-mail**
	Dr Norasykin Mohd Zaid	C14-321	011-65411060	norasykin@utm.my

Mapping of the Course Learning Outcomes (CLO) to the Programme Learning Outcomes (PLO), Teaching & Learning (T&L) methods and Assessment methods:

No.	CLO	PLO (ICGPA CODE)	Weight (%)	Taxonomies and Generic Skills	T&L Methods	Assessment Methods
1	Demonstrate the understanding of telecommunications technologies, computer hardware & software, Internet applications and data communication	KW (Knowledge)	40	C3	1. Face-to-Face Learning 2. Self-Directed Learning 3. Formal Assessment	Final Exam
			10	C3		Quiz

Prepared by:	Certified by:
Name: Dr. Norazrena Abu Samah	Name: Dr. Megat Aman Zahiri Megat Zakaria
Signature:	Signature:
Date: 20th January 2019	Date: 20th January 2019

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2	Organize the concept of network architecture in a well-written report	CS (Communication Skills)	20	P5 (CS1)	1. Face-to-Face Learning 2. Self-Directed Learning 3. Formal Assessment	Project Report
		AP (Application)	10	P4		Practical Report
3	Explain the concept of computer and network architecture in group	TW (Teamworking Skills)	10	A3 (TW1)	1. Face-to-Face Learning 2. Self-Directed Learning 3. Formal Assessment	Project Presentation
4	Assemble computer hardware for simple and common computer setup	PS (Practical Skills)	10	P4	1. Face-to-Face Learning 2. Self-Directed Learning 3. Formal Assessment	Laboratory Practical

Details on Innovative T&L practices:

No.	Type	Implementation
1	Active learning	Conducted through in-class activities
2	Project-based learning	Conducted through project assignment. Students in a group of 4 are required to review and report on network architecture of a facility with computer networks, such as computer laboratory, cyber café, etc.

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Weekly Schedule:

Week 1	**Overview of Telecommunications** • Introduction to Telecommunication • History of Telecommunication Technologies • Internet and Web Applications
Week 2	**Computer Hardware and Software** • Computer Hardware • Computer Software • Computer Assembly
Week 3	**Communications System** • Type of Information & Bandwidth • Broadband and baseband • Synchronous and Asynchronous • Simplex, Half-Duplex and Full Duplex • Serial vs. Parallel, Analog vs. Digital, and Noise
Week 4	**Data Communication** • Evolution of Data Networks • Open Systems Interconnect (OSI) Model • Character Codes (ASCII)
Week 5	**Transmission Media** • Introduction to Transmission Media (Wired & Wireless) • Copper Cables (Coaxial Cables, UTP, STP & International Cabling Specification) • Fiber Optic Cables (Fiber Construction & Types)
Week 6	**Computer Network (Part I)** • Networking Hardware & Function • Network topology (Physical topology & Logical topology)
Week 7	**Computer Network (Part II)** • Types of Network : LAN, WAN, MAN, Internet, Extranet, Intranet • Networking methods : Peer to-peer, Client-server • LAN Applications

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Week 8	**MID-SEMESTER BREAK**
Week 9	**Connecting a Network** • Network Cabling Tools & Accessories • Networking Software (NOS)
Week 10	**Network Management** • Network Infrastructures Basic Design • Concept of Network Management
Week 11	**Wireless Networking** • **Introduction to Technology and standards** • **Institute of Electrical and Electronics Engineers (IEEE) standards** • **Wireless Network Applications**
Week 12	**Internet Infrastructures and Network/Computer Security** • **Internet Protocol TCP/IP** • **Accessing the Internet (Broadband, Modem, DSL)** • **Phishing, SPAM & Virus**
Week 13	**Internet Ethical and Social Issues** • **Intellectual property** • **Malaysian Cyber laws** • **Common Creative License**
Week 14	**Project Discussion and Presentation**
Week 15	**Project Discussion and Presentation**
Week 16 - 18	**Revision Week and Final Examination**

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Transferable skills (generic skills learned in course of study which can be useful and utilised in other settings):

Skills in using Internet Technologies
Practical skills
Teamworking skills
Communication skills

Student learning time (SLT) details:

Distribution of student Learning Time (SLT) Course content outline	Teaching and Learning Activities						TOTAL SLT
	Guided Learning (Face to Face)				Guided Learning Non-Face to Face	Independent Learning Non-Face to face	
CLO	**L**	**T**	**P**	**O**			
CLO1	6h			6h	14h	13h	**39h**
CLO2	4h			4h	8h	7h 30m	**23h 30m**
CLO3	2h			2h	2h	2h	**8h**
CLO4	2h		2h		2h	2h	**8h**
Total SLT	**14h**		**2h**	**12h**	**26h**	**24h 30m**	**78h 30m**

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Continuous Assessment		PLO	Percentage (%)	Total SLT
1	Practical (Group)			
	i. Laboratory Practical	AP	10	**8h**
	ii. Practical Report	PS	10	**8h**
2	Project (Group)			
	i. Report	CS	30	**16h**
	ii. Presentation	TW	10	**8h**
3	Quiz	KW	10	**8h**
Final Assessment			Percentage (%)	Total SLT
1	Final Exam	KW	30	**30h 30m** **1h 30m (exam)**
Grand Total SLT				**80h**

Special requirement to deliver the course (e.g: software, nursery, computer lab, simulation room):

Networking Laboratory

Computer Laboratory

Learning resources:

Main references:

1. Anu A. Gokhale (2005). Introduction to Telecommunications. New York: Thomson Delmar Learning.
2. Charles R. Severance (2015). Introduction to Networking, How the Internet Works. USA: CreateSpace Independent Publishing.
3. Dodd, Annabel Z. (2012). The Essential Guide to Telecommunications, 5th Edition. New Jersey: Prentice Hall.
4. Yu, F. Richard, Zhang Xi Leung and Victor Chung Ming (2013). Green networking and communications: ICT for sustainability. CRC Press, Taylor & Francis Group.
5. Gupta, Prakash C (2006). Data communications and computer network. India: Prentice-Hall.
6. Hallberg, Bruce (2014). Networking a Beginner's Guide. Graw-Hill Osborne Media.
7. Kasera, S., Narang, N. and Narang, S. (2007). Communication Networks, Principles and Practice. New

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York: McGraw-Hill.
8.   Nader F. Mir (2015). Computer and Communication Networks, 2nd Edition. New Jersey : Prentice Hall.
9.   Singh, Brijendra (2006). Data communications and computer networks, 2nd Edition. New Delhi: Prentice-Hall of India.
10. Tanenbaum, Andrew S. and Wetherall, David J. (2011). Computer Networks, 5th Edition. Pearson Prentice-Hall.

Online:

http://elearning.utm.my/

Academic honesty and plagiarism:

Copying of work from other students/groups or from other sources is not allowed. Brief quotations are allowed and then only if indicated as such. Existing texts should be rephrase with your own words to explain what you have read. It is not acceptable to retype existing texts and just acknowledge the source as a reference. Be warned: students who submit copied work will obtain a mark of zero for the assignment and disciplinary actions may be taken by the Faculty. It is also unacceptable to do somebody else's work, to lend your work to them or to make your work available to them to copy.

Other additional information (Course policy, any specific instruction etc.):

Please refer the Project and Practical Guidelines for further details on course assignments.

Disclaimer:

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