DEREE COLLEGE SYLLABUS FOR: **ITC 2024 COMPUTER NETWORKS & CYBERSECURITY FUNDAMENTALS** (Fall 2020)	**3/0/3** **UK LEVEL: 4** **UK CREDITS: 15**

PREREQUISITES:	None
CATALOG DESCRIPTION:	Computer communications systems components, models, operation, and applications. Networking standards, protocols and connectivity aspects. Local area networks design, implementation. Wide area networks, emerging technologies. Cybersecurity threats, measures and protocols. Cryptography basics.
RATIONALE:	The purpose of the course is to introduce students to networking and cybersecurity concepts. The course is suitable for students with no or little experience, who wish to understand the fundamentals of the field.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Identify and compare networking models, configurations, operational characteristics and applications. 2. Demonstrate understanding of characteristics and purposes of reference models and protocols used in networking. 3. Compare topologies, transmission media, connectivity devices and network protocols. 4. Identify the main network security risks, security protocols, and techniques for secure communication.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Classroom lectures, laboratory practical sessions using various simulations tools and progress meetings. • Office hours held by the instructor to provide further assistance to students. • Use of the Blackboard Learning platform, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

ASSESSMENT:	**Summative:**	
	1st assessment: Coursework Short problems on protocols, network equipment and design.	**30%**
	2nd assessment: Portfolio of student work and oral assessment	**10%**
	Final assessment: Final exam Short essay questions and problem-solving cases.	**60%**
	Formative:	
	Take-home short problems, quizzes	**0%**
	The formative assessments aim to prepare students for the summative assessments and expose them to teamwork. The 1st summative assessment tests the LOs 1 and 2. The 2nd summative assessment tests the LOs 1-4. The final summative assessment tests the LOs 1-4.	

	*The final grade for this module will be determined by averaging all summative assessment grades, based on predetermined weights for each assessment. If students pass the **final summative assessment,** which tests all Learning Outcomes for this module, and the average grade for the module is 40 or above, students are not required to resit any failed assessments.*
INDICATIVE READING:	**REQUIRED READING:** 1. Kurose, J.F., Ross, K.W., (2017). *Computer Networks: A Top-Down approach, 7th Edition.* Pearson 2. Wu, C.J. & Irwin, D., (2013). *Introduction to Computer Networks and Cybersecurity*, CRC Press **RECOMMENDED READING:** 1. Peterson, L., & Davie, B. (2012). Computer networks: A systems approach (5th ed.). Amsterdam: Morgan Kaufmann 2. Tanenbaum, A.S., & Wetherall, D.J. (2013) Computer Networks, Pearson
INDICATIVE MATERIAL: *(e.g. audiovisual, digital material, etc.)*	**REQUIRED MATERIAL:** N/A **RECOMMENDED MATERIAL:** N/A
COMMUNICATION REQUIREMENTS:	Daily access to the course's site on the College's Blackboard CMS. Effective communication using proper written and oral English.
SOFTWARE REQUIREMENTS:	Cisco Packet Tracer Wireshark
WWW RESOURCES:	• News & Resource site: https://www.sdxcentral.com / • IEEE Transactions on Networking • Packet Pushers • IP Space
INDICATIVE CONTENT:	1. Computer Networks and the Internet 2. Application Layer 3. Transport Layer 4. The Network Layer 5. The Link Layer 6. Wireless and Mobile Networks 7. Security in Computer Networks