

**DEREE COLLEGE SYLLABUS FOR:****ITC 3175 INTRODUCTION TO COMPUTER NETWORKS**

(Previously ITC 3275)

(Updated Fall 2020)

**3/0/3****UK LEVEL: 5****UK CREDITS: 15**

<b>PREREQUISITES:</b>	ITC 1070 Information Technology Fundamentals																				
<b>CATALOG DESCRIPTION:</b>	Computer communications systems components, models, operation, and applications. Networking standards, protocols and connectivity aspects. Local area networks design, implementation. Wide area networks, emerging technologies.																				
<b>RATIONALE:</b>	This course aims to introduce students to various networking concepts. It includes local and wide area networks and communication protocols.																				
<b>LEARNING OUTCOMES:</b>	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. Determine characteristics and purposes of reference models and protocols used in networking. 3. Evaluate and select the appropriate topology, transmission media, connectivity devices and protocols for various networking environments.																				
<b>METHOD OF TEACHING AND LEARNING:</b>	In congruence with the teaching and learning strategy of the college, the following tools are used:  • Lectures, class discussions, laboratory practical sessions and problem solving. • Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can ask questions and go over lecture material. • Use of the Blackboard Learning platform, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.																				
<b>ASSESSMENT:</b>	<table><tr><td colspan="3"><b>Summative:</b></td></tr><tr><td>1<sup>st</sup> assessment: Project A study that may include any of the following: protocol evaluation, network design, literature review</td><td></td><td><b>30%</b></td></tr><tr><td>2<sup>nd</sup> assessment: Portfolio of student work and oral assessment (not eligible for 2<sup>nd</sup> marking)</td><td></td><td><b>10%</b></td></tr><tr><td>Final assessment: Final exam Answers to short essay questions including problem solving cases</td><td></td><td><b>60%</b></td></tr><tr><td colspan="3"><b>Formative:</b></td></tr><tr><td>Homework : programming problems</td><td></td><td><b>0</b></td></tr></table> The formative assessments aim to shape teaching and prepare students for the summative assessments. The 1 <sup>st</sup> summative assessment tests the LO 1. The 2 <sup>nd</sup> summative assessment tests the LOs 1-3. The final summative assessment tests the LOs 1-3.			<b>Summative:</b>			1 <sup>st</sup> assessment: Project A study that may include any of the following: protocol evaluation, network design, literature review		<b>30%</b>	2 <sup>nd</sup> assessment: Portfolio of student work and oral assessment (not eligible for 2 <sup>nd</sup> marking)		<b>10%</b>	Final assessment: Final exam Answers to short essay questions including problem solving cases		<b>60%</b>	<b>Formative:</b>			Homework : programming problems		<b>0</b>
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	<p><i>The final assessment tests all learning outcomes of this module, therefore students pass the module if the average module grade is 40% or higher.</i></p>
<b>INDICATIVE READING:</b>	<p><b>REQUIRED READING:</b></p> <ol style="list-style-type: none"> <li>Peterson, L., &amp; Davie, B. (2012). <i>Computer networks: A systems approach</i> (5th ed.). Amsterdam: Morgan Kaufmann</li> </ol> <p><b>RECOMMENDED READING:</b></p> <ol style="list-style-type: none"> <li>Kurose, J.F., Ross, K.W., (2009). <i>Computer Networks: A Top-Down approach</i>. Pearson</li> <li>Tanenbaum, A.S., (2010) <i>Computer Networks</i>, Pearson</li> </ol>
<b>INDICATIVE MATERIAL:</b> (e.g. audiovisual, digital material, etc.)	<p><b>REQUIRED MATERIAL:</b> N/A</p> <p><b>RECOMMENDED MATERIAL:</b> N/A</p>
<b>COMMUNICATION REQUIREMENTS:</b>	<p>Daily access to the course's site on the College's Blackboard CMS. Effective communication using proper written and oral English.</p>
<b>SOFTWARE REQUIREMENTS:</b>	<p>Java and C programming languages Cisco Packet Tracer Wireshark</p>
<b>WWW RESOURCES:</b>	<ul style="list-style-type: none"> <li>Network News: <a href="http://networkheresy.com/">http://networkheresy.com/</a></li> <li>News &amp; Resource site: <a href="https://www.sdxcentral.com/">https://www.sdxcentral.com/</a></li> <li>IEEE/ACM Transactions on Networking:</li> <li><a href="http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?reload=true&amp;punumber=90">http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?reload=true&amp;punumber=90</a></li> <li>Data networking industry: <a href="http://packetpushers.net/">http://packetpushers.net/</a></li> <li>Networking, data centres, etc.: <a href="http://www.ipspace.net/Main_Page">http://www.ipspace.net/Main_Page</a></li> <li>Lectures I: <a href="https://www.youtube.com/playlist?list=PLF360ED1082F6F2A5">https://www.youtube.com/playlist?list=PLF360ED1082F6F2A5</a></li> <li>Lectures II: <a href="https://www.youtube.com/playlist?list=PL5419FC33483A2563">https://www.youtube.com/playlist?list=PL5419FC33483A2563</a></li> <li>A free book: <a href="http://bestfreebooks.org/networking-self-teaching-guide-james-edwards-2/">http://bestfreebooks.org/networking-self-teaching-guide-james-edwards-2/</a></li> <li>Future trends: <a href="https://www.quora.com/Whats-next-in-computer-networking">https://www.quora.com/Whats-next-in-computer-networking</a></li> </ul>
<b>INDICATIVE CONTENT:</b>	<ol style="list-style-type: none"> <li>Overview of computer networks</li> <li>OSI model</li> <li>Physical layer</li> <li>Datalink layer</li> <li>Network layer</li> <li>Session &amp; Transport Layer</li> <li>Presentation Layer</li> <li>Application Layer</li> </ol>