

**DEREE COLLEGE SYLLABUS FOR:
ITC 3219 NETWORK ADMINISTRATION**

3/1.5/3

(Previously: ITC 3319 NETWORK ADMINISTRATION)

(Updated Fall 2023)	UK LEVEL: 5 UK CREDITS: 15								
PREREQUISITES:	ITC 2193 Operating Systems Concepts ITC 2024 Computer Networks & Cybersecurity Fundamentals <u>or</u> ITC 3175 Introduction to Computer Networks								
CATALOG DESCRIPTION:	Installation and administration concepts. Management, monitoring, and optimization of system performance, reliability, and availability. Design issues and support in a corporate environment. Troubleshooting and end user support.								
RATIONALE:	The course provides students with the knowledge and the skills necessary to install, configure and administer a network on server machines that are part of a domain. The course approaches network administration on operating system level, and provides the foundations for related certifications.								
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: <ol style="list-style-type: none"> 1. Install and upgrade a network operating system and explain the relevant procedures. 2. Identify network security and disaster recover policy requirements. 3. Design and simulate solutions on LANs, web servers and terminal services. 								
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: <ul style="list-style-type: none"> • Lectures, lab sessions, class discussions, problem-solving sessions, and review of real-world cases • Office hours held by the instructor to provide further assistance to students. • Use of the Blackboard Learning platform to support communication, posting lecture notes, assignment instruction, timely announcements, and online submission of assignments. 								
ASSESSMENT:	<p>Summative:</p> <table border="1" data-bbox="564 1550 1439 1850"> <tr> <td data-bbox="564 1550 1345 1650">1st assessment: Midterm exam short essay questions and case problems</td> <td data-bbox="1345 1550 1439 1650" style="text-align: center;">30%</td> </tr> <tr> <td data-bbox="564 1650 1345 1751">2nd assessment: Portfolio of student work and oral assessment (not eligible for 2nd marking)</td> <td data-bbox="1345 1650 1439 1751" style="text-align: center;">10%</td> </tr> <tr> <td data-bbox="564 1751 1345 1850">Final assessment: Individual project Design a network solution for a given set of requirements</td> <td data-bbox="1345 1751 1439 1850" style="text-align: center;">60%</td> </tr> </table> <p>Formative:</p> <table border="1" data-bbox="564 1921 1439 1984"> <tr> <td data-bbox="564 1921 1362 1984">In-class, 1-hour, “diagnostic” test: short essay questions</td> <td data-bbox="1362 1921 1439 1984" style="text-align: center;">0</td> </tr> </table>	1 st assessment: Midterm exam short essay questions and case problems	30%	2 nd assessment: Portfolio of student work and oral assessment (not eligible for 2 nd marking)	10%	Final assessment: Individual project Design a network solution for a given set of requirements	60%	In-class, 1-hour, “diagnostic” test: short essay questions	0
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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; padding: 5px;">Homework: case problems</td> <td style="width: 20%; text-align: center; padding: 5px;">0</td> </tr> </table> <p>The formative assessments aim to prepare students for the project and the examination.</p> <p>The 1st summative assessment tests LOs 1 and 2.</p> <p>The 2nd summative assessment tests LOs 1, 2 and 3.</p> <p>The final summative assessment tests LOs 1, 2 and 3.</p> <p><i>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.</i></p>	Homework: case problems	0
Homework: case problems	0		
<p>INDICATIVE READING:</p>	<p>REQUIRED READING:</p> <p>Thomas A. Limoncelli, Christina J. Hogan, Strata R. Chalup (2017). <i>The Practice of System and Network Administration</i>. Volume 1. 3rd Ed. Addison-Wesley.</p> <p>RECOMMENDED READING:</p> <p>Minasi, M. et al (2017). <i>Mastering Windows Server 2016</i>. Indianapolis: Sybex.</p> <p>Harry Foxwell, Glynn Foster (2015). <i>Oracle Solaris 11.2 System Administration Handbook (Oracle Press)</i>. McGraw-Hill Osborne.</p> <p>Michael W Lucas, (2011). <i>Networking for Systems Administrators (IT Mastery Book 5)</i>. Tilted Windmill Press.</p> <p>Minasi, M. et al (2013). <i>Mastering Windows Server 2012 R2</i>. Indianapolis: Sybex.</p> <p>Wale Soyinka, (2012). <i>Linux Administration: A Beginners Guide</i>, Sixth Edition. McGraw-Hill Osborne.</p> <p>Journals/Magazines</p> <ul style="list-style-type: none"> ● Ritlibraries - Networking and Systems Administration: Journals and Magazines ● IEEE Xplore Digital Library - Network, IEEE ● Microsoft Technet Magazine ● Linux Journal ● Linux Magazine 		
<p>INDICATIVE MATERIAL: (e.g. audiovisual, digital material, etc.)</p>	<p>REQUIRED MATERIAL: N/A</p> <p>RECOMMENDED MATERIAL: Microsoft TechNet Knowledge Base – CD-ROM latest version</p>		
<p>COMMUNICATION REQUIREMENTS:</p>	<p>Daily access to the course’s site on the College’s Blackboard CMS. Communication using proper written and oral English.</p>		

SOFTWARE REQUIREMENTS:	VMWare (Workstation PRO) Network Operating System
WWW RESOURCES:	<ul style="list-style-type: none"> • Microsoft Certification Program https://www.microsoft.com/en-us/learning/certification-overview.aspx • Cisco training and events: https://www.cisco.com/c/en/us/training-events.html • Network Security Certification https://www.eccouncil.org/programs/certified-network-defender-cnd/ https://www.eccouncil.org/programs/certified-network-defense-architect-cnda/ • Windows Server 2019: https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2019?filetype=ISO • Network Administration and security tutorials http://www.omniseccu.com/ • Windows Server Administration Fundamentals (Microsoft Virtual Learn Academy): https://docs.microsoft.com/en-us/learn/?l=LaRRbeXz_5004984382 • Windows MSDN Resources: https://channel9.msdn.com/ • Linux System Administration Basics https://www.linode.com/docs/tools-reference/linux-system-administration-basics • TradePub.com http://www.tradepub.com/category/information-technology-networking-and-communications-network-administration/753/
INDICATIVE CONTENT:	<ol style="list-style-type: none"> 1. Workstation Architecture 2. Workstation Hardware Strategies 3. Workstation Software Life Cycle 4. Server Hardware Strategies 5. Server Hardware Features 6. Server Hardware Specifications 7. Service Requirements 8. Service Planning and Engineering 9. Service Resiliency and Performance Patterns 10. Disaster Recovery and Data Integrity 11. Network Architecture 12. Network Operations 13. Datacenters Overview 14. Running a Datacenter 15. Customer Support 16. Maintenance Windows 17. Service Monitoring 18. Data Storage 19. Backup and Restore 20. Web Services