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| Module Title: | Networking 1 |
| Language of Instruction: | English |
| Credits: | 5 |
| NFQ Level: | 6 |
| Module Delivered In | 8 programme(s) |
| Teaching & Learning Strategies: | Combination of lectures and practical laboratory sessions. Lectures will take the form of traditional theory and tutorials. Laboratory sessions take the form of individual & group work. |
| Module Aim: | To provide the student with: 1. the skills necessary to build Local Area Networks. 2. an understanding of networking concepts. 3. the capability to understand how data is transferred across Ethernet networks. |
| Learning Outcomes | |
| <i>On successful completion of this module the learner should be able to:</i> | |
| LO1 | Describe the hardware, software, and services that comprise a Local Area Network, and be able to articulate how these components integrate to form a network solution |
| LO2 | Demonstrate expertise in configuring network end devices and network switches to construct Local Area Networks (LANs) |
| LO3 | Explain key networking protocols, and their hierarchical relationship in the context of a conceptual model, such as the OSI and TCP/IP framework |
| Pre-requisite learning | |
| Module Recommendations | |
| <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i> | |
| No recommendations listed | |
| Incompatible Modules | |
| <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i> | |
| No incompatible modules listed | |
| Co-requisite Modules | |
| No Co-requisite modules listed | |
| Requirements | |
| <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i> | |
| No requirements listed | |

Module Content & Assessment

| Indicative Content |
|---|
| Introduction to Computer Networks Network devices, types of networks, Internet |
| Basic Switch and End Device Configuration Initial configuration of switches and the end devices connected to them in LANs |
| Protocols and Models Introduction to common networking protocols and the OSI 7 Layer networking model and the TCP/IP networking model |
| OSI Lower Layers Physical, Data Link, and Network Layers |
| Ethernet Switching Switch operation in Ethernet LANs |
| Address Resolution Protocol (ARP) Role of ARP in Ethernet networks |

| Assessment Breakdown | % |
|-----------------------|---------|
| Continuous Assessment | 100.00% |

| Continuous Assessment | | | | |
|-----------------------------|--|-------------------|------------|-----------------|
| Assessment Type | Assessment Description | Outcome addressed | % of total | Assessment Date |
| Other | Two practical examinations to assess the student's knowledge of basic switch and end device configuration and their ability to build simple local area networks. | 2 | 40.00 | n/a |
| Other | The students will be given two online tests to assess their knowledge of Local Area Networks and Layer 2 switch operations | 1,3 | 20.00 | n/a |
| Examination | The students will be given a written test to assess their knowledge of Protocols and Network Models, the operation of the Data Link and Physical Layers and the use of ARP in networking | 3 | 20.00 | n/a |
| Practical/Skills Evaluation | Weekly practical/laboratory work is designed to allow students to demonstrate the achievement of the learning outcomes | 1,2 | 20.00 | n/a |

No Project

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

| Workload: Full Time | | |
|----------------------------|--------------------|--|
| <i>Workload Type</i> | <i>Frequency</i> | <i>Average Weekly Learner Workload</i> |
| Lecture | 12 Weeks per Stage | 1.00 |
| Laboratory | 12 Weeks per Stage | 2.00 |
| Estimated Learner Hours | 15 Weeks per Stage | 5.13 |
| Tutorial | 12 Weeks per Stage | 1.00 |
| Total Hours | | 125.00 |

Module Delivered In

| Programme Code | Programme | Semester | Delivery |
|----------------|--|----------|-----------|
| CW_KWCCD_B | Bachelor of Science (Honours) in Creative Computing and Digital Innovation | 1 | Mandatory |
| CW_KCCYB_B | Bachelor of Science (Honours) in Cyber Crime and IT Security | 1 | Mandatory |
| CW_KCCIT_B | Bachelor of Science (Honours) in Information Technology Management | 1 | Mandatory |
| CW_KCSOF_B | Bachelor of Science (Honours) in Software Development | 1 | Mandatory |
| CW_KCCYB_D | Bachelor of Science in Cybercrime and IT Security | 1 | Mandatory |
| CW_KCCSY_D | Bachelor of Science in Information Technology Management | 1 | Mandatory |
| CW_KCSOF_D | Bachelor of Science in Software Development | 1 | Mandatory |
| CW_KCCOM_C | Higher Certificate in Science in Computing Programming | 1 | Mandatory |