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| **Module code** | SS-2205 | | |
| **Module Title** | Computer Networks | | |
| **Degree/Diploma** | Bachelor of Science (Computer Science) | | |
| **Type of Module** | Major Core | | |
| **Modular Credits** | 4 | **Total student Workload** | 10 hours/week |
| | | **Contact hours** | 4 hours/week |
| **Prerequisite** | SS-1202 Computer Systems and Information Technology | | |
| **Anti-requisite** | None | | |

**Aims**

This module introduces key concepts in the design and implementation of modern computer networks and in network management issues.

**Learning Outcomes**

*On successful completion of this module, a student will be expected to be able to*:

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| Lower order : | 20% | - explain the different layers in a typical network stack<br>- explain the essential core services in a typical network<br>- explain how data is routed correctly to its destination, despite possible congestion and collision<br>- explain the features that make a network resilience to transmission error and node failure |
| Middle order : | 60% | - apply queueing theory to analyze network performance |
| Higher order: | 20% | - set up a network<br>- configure network services |

**Module Contents**

- OSI reference models; Network standards and standardization bodies; TCP/IP; Circuit switching and packing switching; Streams and datagrams; Physical layer networking concepts; Data link layer concepts; Inter-networking and routing
- Transport layer services; Multicast and broadcast; Domain names and name services; Network management; Queueing theory; Flow control; Congestion control; Error control; Quality of service; Failure recovery; Issues for Internet service providers; Security issues; Network management

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| **Assessment** | Formative assessment | Interactive Quizzes and Feedback |
| | Summative assessment | Examination: 50% |
| | | Coursework: 50%<br>- 2 class tests (20%)<br>- 1 written assignment (15%)<br>- 1 laboratory exercise (15%) |