## Advanced Networking

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| *SMS Code* | IN723001 | *Directed Learning hours* | 60 |
| *Level* | 7 | *Workplace or Practical Learning hours* | nil |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN615005 | *Total Learning Hours* | 150 |
| *Name of other Programme:* | | | |

***Aims***

To provide students with an understanding of how to evaluate and apply advanced networking protocols, services and concepts to the design, deployment and maintenance of medium to large scale networks.

***Learning Outcomes***

At the successful completion of this course, students will be able to:

1. Implement designs for facilitating large scale wide area networks.
2. Plan and deploy mechanisms for secure network information exchange.
3. Implement solutions for network virtualisation.
4. Design and implement fault-tolerant solutions for high availability of local area and wide area networks.
5. Adapt the above as required for specific ICT contexts and/or organisational domains.

***Indicative Content***

* Border gateway protocol (BGP)
* Virtual route forwarder (VRF)
* Link aggregation
* Hot standby routing protocol (HSRP), gateway load balancing protocol (GLBP)
* Multi area open shortest path first (OSPF)
* Equal cost multi path (ECMP)
* Quality of service (QoS)
* Multi protocol label switching (MPLS) virtual private networks (VPN)

***Assessment***

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Research assignment | 10% | 1,2,3,4 |
| Design and implementation project | 40% | All |
| Exam | 50% | All |

***Resources***

**Required:TBA**