## 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 tasks as required for specific ICT contexts and/or organisational domains.

***Indicative Content***

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

***Assessment***

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Research assignment | 15% | 1,2,3,4 |
| Design and implementation project | 40% | 1,2,4,5 |
| Final theory exam | 25% | 1,2,3,4 |
| Final practical exam | 20% | 1,2,3,4,5 |

***Resources***

**Required:TBA**