* 1. **Scaling Networks**

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| *SMS Code* | IN615006 | *Directed Learning hours* | 60 |
| *Level* | 6 | *Workplace or Practical Learning hours* | nil |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN615005 | *Total Learning Hours* | 150 |
| *This course approved in another Programme: No* | | | |

***Aims***

Scaling Networks covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality.

***Learning Outcomes***

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

Describe, implement and troubleshoot link aggregation

Describe, implement and troubleshoot layer 2 loop prevention protocols

Describe and implement first hop redundancy protocols

Describe, implement and troubleshoot advanced enterprise routing protocols for IPv4 and IPv6

Describe and implement a wireless local area network (WLAN) in a small-to-medium network

Manage Cisco IOS® Software licensing and configuration files

***Indicative Content***

* The operation and configuration of Spanning Tree (STP) and Rapid Spanning Tree (RSTP)
* The operation and configuration of port aggregation (PAgP) and link aggregation protocols (LACP)
* The purpose and operation of hot standby routing protocol (HSRP)
* Operation and configuration of enhanced interior gateway routing protocol (EIGRP)
* Operation and configuration of multi-area open shortest path first protocol (OSPF) v2 and v3
* The operation and configuration of a wireless network
* Managing IOS System files and IOS licensing

***Assessment***

This course is developed and quality controlled by Cisco. The weighting of the assessments is able to be localised, but the assessments themselves are controlled by Cisco.

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Weekly quiz | 20% | All |
| Case Study | 30% | All |
| Skills Based Assessment | 30% | 1,2,4 |
| Theory Exam | 20% | All |

A single final result to be entered in SMS at completion.

***Resources* Required:**

Cisco Network Academy Routing and Switching series. “Scaling Networks”.