# Solent University Module Descriptor

## **Module Code: COM513** **Module title: Scaling Networks**

### **Why is this module important?**

The internet uses for users, businesses, enterprises and industry are complex and they are connected by technologies which are developing rapidly to meet the need of internet of things, virtualisation and cloud-based networks.

This module has the aim of giving you the knowledge and practical skills to specify, design and scale large computer networks.

### **What you will learn on the module**

By completing documentation on realistic example networks you will learn how to document a large-scale network. By performing practical computer network based lab activities you will learn how to configure VLANs, trunking, port security and SSH remote access on a switch. Then, you will implement inter-VLAN routing and NAT on a router. You will configure sub interfaces to communicate with the switches. You will configure inter-VLAN routing with RIPv2, VLANs with VTP, trunking, and EtherChannel with PVST

OSPFv2 for IPv4 and OSPFv3 configurations for IPv6.

The module will prepare in part, for you to take the Cisco Professional Certification: CCNA Routing and Switching.

### **How you will learn**

The module will consist of all lab-based practical sessions which will allow you to gain hands-on experience of the module topics through a series of lab activities. In most weeks, these will be preceded by a 'mini-lecture' to introduce the module topic and to ensure that you are aware of the background to the topic before beginning the practical exercise. During the lab sessions, we will be on-hand to help you with problems.

You will complete challenges which will enable you to use a combination of real network devices and equipment, computer networks devices and traffic simulation and analysis.

The course materials are available as interactive online reading and viewing materials with video animation and text interspersed with activities such as practical’s and real equipment, simulation and research labs.

### **How much time the module requires**

For a 20 Credit module you are expected to study for 200 hours (which equates to 10 hours per credit.  This total learning time is made up of contact time, directed learning tasks, independent learning and assessment activity. Your tutor will offer you guidance on how you should best manage your study time on this module.

### **How you will be assessed**

#### **Tasks which help you to learn and prepares you for summative tasks (Formative):**

Your achievement will be monitored, and formative feedback provided by online chapter assessments which are related to the Multi Choice Answer (MCA) test. Also feedback will be provided for each skills integration challenge which will be included in the portfolio. As well as on-line feedback, you will be supported with individual verbal feedback.

#### **Tasks which count towards your degree (Summative):**

Complete a MCA test in class on the scaling of networks

Complete a portfolio of skills integration challenges which include completing network documentation, planning and implementation, testing and troubleshooting networks for large organisations.

#### **When assessment does not go to plan**

The reassessment will be retaking the MCA test in the same format at the next available resit point.

You will gather feedback from the tutor and Improve and resubmit the portfolio of the skills integration challenges. .

### **What you will be able to do after the module**

1. Understand design theories, the requirements and challenges created by large scale computer networks.
2. Apply underlying theories, concepts and principles to a wide range of techniques of scaling computer networks to business, enterprise and industry requirements.
3. Analyse and solve real-world problems related to large scale computer networks
4. Determine performance issues and problems and improve large scale computer networks performance.

### **How this relates to the dimensions of Solent’s Real-world curriculum framework**

|  |  |  |
| --- | --- | --- |
| Dimensions | How students learn | How students are assessed |
| Students are challenged to think in critical, creative and applied ways | Learning the module material will allow you to apply it to an interesting and engaging scenario. | The skills integration challenges will be assessed in the portfolio |
| Students are inspired to do research through inquiry, curiosity and problem-solving | The online activities are based around solving problems and the classroom activities are related to connecting real networks with real equipment. | The online activities performed are assessed in the portfolio |
| Students experience an intellectually stimulating curriculum which inspires them to learn for life | The certification program is part of a lifelong learning strategy created by network professionals endorsed | The assessment is preparation for industry-based certifications Cisco CCNA |

### **Summative assessment details**

|  |  |  |
| --- | --- | --- |
| AE1 | Weighting: | 50% |
|  | Assessment type: | MCA test |
|  | Aggregation: | Aggregated to AE2 |
|  | Length/duration: | 90Mins |
|  | Online submission: | No |
|  | Grade marking: | No |
|  | Anonymous marking: | No |

|  |  |  |
| --- | --- | --- |
| AE2 | Weighting: | 50% |
|  | Assessment type: | Portfolio of online skills challenges |
|  | Aggregation: | Aggregated to AE1 |
|  | Length/duration: | Minimum of 4 hours |
|  | Online submission: | Yes |
|  | Grade marking: | Yes |
|  | Anonymous marking: | Yes |

### **Module Author:**

|  |  |  |  |
| --- | --- | --- | --- |
| Module Title: Scaling Networks | | | |
| Credit Points: | 20 | Module Code: | COM513 |
| FHEQ Level: | 5 | School/Service | SMAT |
| Module Delivery Model: | CD | Max/Min student numbers | 25 |
| Module Leader: | Warren Earle | | |
| HECOS code | 100365 | | |

### **Module change history:**

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| --- | --- | --- | --- |
| Module Approved/Year Implemented/Code | July 2019 | 2020/21 | COM513 |
| Module modified/Year Implemented/Code |  |  |  |
| Add extra rows as required |  |  |  |