



PRIFYSGOL CYMRU

Y Drindod Dewi Sant

UNIVERSITY OF WALES

Trinity Saint David

SWANSEA - ABERTAWE

UNIVERSITY OF WALES: TRINITY SAINT DAVID
PRIFYSGOL CYMRU: Y DRINDOD DEWI SANT

School of Applied Computing

Local Area Networks ACCC5002
Level 5

MODULE CODE:	ACCC5002
TITLE:	Local Area Networks
LEVEL:	5
CREDITS:	20
JACS CODE:	I 120

AIM(S)

- To study in depth the technical issues related to switching techniques, to have an in depth knowledge of architecture, components, and operations of switches in a larger and more complex network.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Demonstrate a detailed understanding of theoretical knowledge relating to switching techniques.
2. Configure and troubleshoot routers and switches and resolve common issues with VLANs, STP, and VTP in IP networks.
3. Students will also develop the knowledge and skills needed to implement ACL, DHCP and NAT operations in a network.
4. Critically evaluate design and security measures implemented in LAN

INDICATIVE CONTENT

- Switched networks and hierarchical networks
- Switch configuration
- Virtual local area networks (VLAN)
- Inter-VLAN routing using routers and L3 switch
- LAN redundancy and link aggregation
- DHCP and NAT
- Access control lists and LAN security
- Wireless LANs

LEARNING AND TEACHING STRATEGY

The majority of factual material will be presented in lectures using handouts, guided reading and use of internet and intranet material as required.

Tutorial classes will concentrate on the technical design.

Laboratories will be used to allow students to gain advanced routing and switching skills with the aid of lab equipment and appropriate softwares such as OPNET, Packet tracer, GNS, etc.

The allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30%
Independent learning	140	70%
Placement learning	0	
TOTAL	200	100%

BIBLIOGRAPHY

Essential

Routing and Switching Essentials Companion Guide by Cisco Networking Academy, 2013

Scaling Networks companion guide by Cisco Networking Academy, Cisco Press, 2013.

Background

W. Lewis (2011), LAN switching and wireless: CCNA exploration companion guide, Cisco press.

Routing and Switching Essentials course booklet by Cisco Networking Academy, 2013

J. E. Goldman and P. T. Rawles (2012), Local Area Networks A Business-oriented approach (2nd Ed), John Wiley and Sons Inc.

N. Olifer and V. Olifer (2006) Computer Networks Principles, Technologies and Protocol for Network Design, John Wiley and Sons, Ltd.

K. Pahlavan and P. Krishnamurthy (2009), Networking Fundamentals, John Wiley and Sons Inc.

Websites

<http://www.netacad.com> (password required)