

<b>Pre-Requisite Modules code(s)</b>	<b>Co-Requisite Modules code(s)</b>	<b>ECTS credits</b>	<b>Module Code</b>	<b>Module Title</b>
		5	CMPU4050	Systems Integration

### 8.8.1. Systems Integration

**Module author:** Ronan Bradley.

#### **Module Description:**

This module covers the issues relating to the integration of diverse computer systems in a modern networking environment and the technologies commonly used to address them. The module focuses on system and network services such as centralised authentication and authorisation, naming and file sharing

#### **Module aim**

The aim of this module is to provide the student with both a theoretical understanding of the design and operation of the system and network services required to integrate a heterogeneous network environment and hands-on experience of configuring these services to create an operational network supporting common services such as authentication, authorisation, naming and file sharing.

#### **Learning Outcomes:**

On completion of this module, the learner will be able to

- Describe and compare the purpose, configuration and operation of common system and network services such as DNS, ntp, LDAP, NIS, nfs and SaMBa
- Configure common network services to enable file sharing, naming and centralised authentication and authorisation
- Configure system authentication and authorisation mechanisms to use network services to create a single authentication/authorisation domain
- Analyse system performance to identify failures or performance issues relating to the system or the network services in use

#### **Learning and Teaching Methods:**

Course delivery involves a combination of lectures, self-paced study and relevant laboratory work. Included in the materials is a significant practical aspect to the course where learners will gain exposure to industry standard software systems with an opportunity to explore the issues surrounding systems integration in general.

#### **Module content:**

- Authentication and authorisation including
- User Management on UNIX and Windows Systems including adding and removing users and groups
- Configuration and integration of network authentication mechanisms on UNIX and Windows

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- Operation of common performance analysis tools to analyse the current performance characteristics of the system and network for the identification of actual and potential problems
- File sharing services for the integration of UNIX and mixed UNIX, Windows networks
- Configuring of file sharing services on UNIX such as SaMBa and nfs
- Criteria for selection of file sharing services in a given network environment
- Operation of the Domain Naming System and configuration using bind on a UNIX system
- Overview of other network services commonly used (such as NTP)

### Module Assessment

Assessment by a combination of Continuous Assessment and Exam

Exam 60%, Continuous Assessment 40%

### Essential Reading:

BELLOMO, M. M., James. (2000). Network and System Integration for Dummies, John Wiley & Sons.

HARVEL, L., WEBB, David., FLYNN, Steven., WHITEHURST, Todd. (2000). The UNIX and Windows 2000 Handbook: Planning, Integration and Administration, Prentice Hall PTR.

### Supplemental Reading:

Marty Poniatowski, 2002, UNIX User's Handbook, 2nd ed., Prentice Hall PTR

ISBN: 0-13-065419-1

Steve Shah, Wale Soyinka. 2005, Linux Administration: A Beginner's Guide. Osborne/McGraw-Hill

ISBN: 0-07-226259-1

### Web references, journals and other:

Relevant web references, journals and other will be indicated during the teaching of the module.

### Further Details:

Single Semester Module

4 contact hour per week, 2 hours lecture, 2 hours lab

**Date of Academic Council approval .....**