Pre-Requisite Modules code(s)	Co-Requisite Modules code(s)	ECTS Credits	Module Code	**Module Title**
			CMPU3039	Software Installation and Maintenance

8.3.6. Software Installation and Maintenance

Module authors: Paul Kelly and Damian Bourke

Module Description:

Previously students will have demonstrated proficiency in Unix/Linux fundamentals including the File System Hierarchy and in the development of software using a variety of development tools, languages and development platforms. This module is intended to build on this proficiency and to take the student's development skills to a more practical level within the development process namely the roll-out and maintenance of software across the enterprise. This module introduces the student to the concepts behind software deployment. Essentially it builds upon the student's understanding of software development and operating systems. It introduces the techniques for installing and configuration of applications developed by the students across a number of platforms.

Module aim

The aim of the course is

- to provide students with the tools for the development, deployment and maintenance of a software system on stand-alone and networked environments.
- to provide the student with the necessary skills to write end-user documentation.

Learning Outcomes:

On completion of the course the learner will:

- be able to select and utilise the tools available for software development, deployment and maintenance.
- know how to create and maintain software libraries
- demonstrate a proficiency in a scripting language
- be able to deploy and configure application to run on a variety of platforms and environments
- be able to demonstrate appropriate version control
- be able to produce detailed documentation to assist the end-user in deploying software and implementing version control

Learning and Teaching Methods:

Teaching will be through a combination of lectures and labs. Lectures will introduce the concepts behind software development and deployment. Labs will be used to reinforce lectures through the use of weekly lab exercises and at least two assignments.

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Module content:

- Introduction
- Development Tools
- Static and Dynamic libraries
- Make utility
- Installation scripts
- Debugging Tools
- Version Control Tools
- Customising the shell: Shell variables
- Pipes, filters and Pattern matching
- Stream editing: sed
- Process Handling; Process Ids, foreground and background processes, Signal handling, PIDs
- Advanced Linux/Unix Shell scripting and PowerShell scripting within Windows:
- Macro processing: m4
- Programmable filters:
- Process management
- Package management tools and end-ser documentation

Laboratory exercises to include at a minimum:

- Development and deployment of an application on a variety of stand-alone platforms and on a networked environment
- Configuration of an application to run in a variety of environments

Module Assessment

Written Examination:	60%
Continuous Assessment:	40%

Essential Reading:

Edward C. Bailey, 1997, *Maximum RPM*, (Imprint: Sams) Macmillan Computer Publishing, Indiana. ISBN: 0-672-31105-4

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			CMPU3039	Software Installation and Maintenance

Supplemental Reading:

Web references, journals and other:

Donnie Barnes, 1999, The RPM How-To Guide (http://www.rpm.org/RPM-HOWTO/), Red Hat Inc. Accessed 7th March 2006

Article: What You Need to Write Man Pages. By Peter Seebach http://www.linux.com/article.pl?sid=04/02/05/1651203 (Accessed: 12th March)

Further Details:

One semester comprising 2 hours of Lectures and 2 hours of Laboratory.

Date of Academic Council approval ……..