London South Bank University | Department of Informatics

Module Guide

Computing Platform Administration

BIF-4-CPA

Faculty of Business

2016/17

Level 4

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1. MODULE DETAILS

Module Title:	Computing Platform Administration
Module Level:	4
Module Reference Number:	BIF-4-CPA
Credit Value:	20
Student Study Hours:	200
Contact Hours:	75
Private Study Hours:	125
Pre-requisite Learning (If applicable):	Computer Technology (or its equivalent)
Co-requisite Modules (If applicable):	None
Course(s):	HND/FdSc Informatics
Year and Semester	2016/17, Semester 1
Module Coordinator (MC):	Dr Simon Kestner
MC Contact Details (Tel, Email, Room):	020-7815-7410, kestner@lsbu.ac.uk, FW218
Teaching Team & Contact Details:	As above
Subject Area:	Informatics
Summary of Assessment Method:	Coursework only
External Examiner appointed for module:	Hannah Dee

2. SHORT DESCRIPTION

This module will extend your understanding of the technologies that underlie modern computing platforms, ranging from handheld devices to cloud platforms. The emphasis is on current rather than historically important technologies. You will also gain a wide range of systems and network administration skills, and learn how to analyse aspects of network performance.

3. AIMS OF THE MODULE

This module aims to give students a good appreciation of modern operating system technology, the principles of data transmission, protocols and security issues, and the characteristics of various kinds of computer networks. It will teach students how to configure and manage a range of computing platforms including remote and virtual servers, multi-user systems, and wired and wireless networks. It will also develop students' analytical skills relating to aspects of network performance.

4. LEARNING OUTCOMES

4.1 Knowledge and Understanding

After completing this module you should be able to:

- Describe operating systems and networks and their role in supporting secure, reliable business functions and processes

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4.2 Intellectual Skills

To be able to:

- Predict likely future developments in different kinds of computing platform.

4.3 Practical Skills

To be able to:

- Use a variety of tools to configure and manage system and network tasks, automating them where appropriate,
- Analyse computer, data transmission and network performance.

5. ASSESSMENT OF THE MODULE

The assessment is 100% coursework. It will consist of a series of four short written or online tests (so called phase tests) (worth 60% of the overall marks) plus one or more timed practical exercises in which students will be required to demonstrate their ability to solve practical problems (40% of the overall marks). Each of the phase tests is marked out of 20. The best three marks will be added to give the mark out of 60. Phase Test 1 relates to material from both lectures and labs from weeks 1, 2, and 3. Phase test 2 covers weeks 4 and 5, phase test 3 weeks 6, 7 and 8, phase test 4 all weeks from 1 through to 10. The Timed Practical Exercise in week 12 will consist of series of tasks to be carried out using the UNIX console and the students providing evidence that they have done them and produced the required results.

6. FEEDBACK

The feedback mark from the phase tests is calculated by computer and shown immediately after the student has submitted his or her answers. The timed practical exercise is marked by hand and feedback is normally given to students within 15 working days after the submission of an assignment.

7. INTRODUCTION TO STUDYING THE MODULE

7.1 Overview of the Main Content

Here is the planned week-by-week schedule. Note that the Lectures are in the Friday session from 10 to 12. Except that the phase tests will take up almost all the lecture time on the days that they are held so the lectures will be presented within the lab time from 1 to 4 the same day. In week 11 the *Preparation for timed practical exercises* will be the sitting of a trial run practice test which has a similar format to the real test the following week (week 12). The real timed practical exercise will be on the Friday in week 12.

Lecture topic… Friday	**Assessment…Also Friday**
30 Sep 2016 Week 1: Computer Technology Today	
7 Oct 2016 Week 2: Operating Systems #1	
14 Oct 2016 Week 3: Operating Systems #2	
21 Oct 2016 Week 4: Operating Systems #3	21 Oct 2016 Phase Test 1
28 Oct 2016 Week 5: Computer Networks #1	
4 Nov 2016 Week 6: Computer Networks #2	4 Nov 2016 Phase Test 2
11 Nov 2016 Week 7: Computer Networks #3	
18 Nov 2016 Week 8: Computer System Security	
25 Nov 2016 Week 9: Systems Administration #1	25 Nov 2016 Phase Test 3
2 Dec 2016 Week 10: Systems Administration #2 + Review	
9 Dec 2016 Week 11:	9 Dec 2016 Phase Test 4
9 Dec 2016 Week 11: *Preparation for timed practical exercises*	
16 Dec 2016 Week 12:	16 Dec 2016 Timed exercises
13 Jan 2017 Week 13: (*Slack, in case of contingencies*)	13 Jan 2017 *"Catch-up" tests*

7.2 Overview of Types of Classes

Timetabled classes for this module consist of a single 2-hour lecture and a single 3-hour lab session each week.

7.3 Importance of Student Self-Managed Learning Time

Many students find technical subjects intrinsically hard to grasp, and so it is vital to spend sufficient time reading the lecture notes and other resources and practising using the tools in addition to attending all of the lectures and lab sessions. In general, students are expected to devote more private study time to modules each week than is spent in timetabled classes. Last year (2015 – 2016) 9 of the 21 students failed the failed to pass on the first attempt. Only then did they finally realise they really had to put in some practice time and actually settle down to do some. All 9 passed the resit and some even did quite well but they all only got credited with the capped mark of 40%. The other key point is that the first phase test is in week 4 so it is necessary for students to start studying in week 1. People often think that they can guess the answers to multiple choice tests but the previous years' results show that most students cannot. There are practice tests and information available and it is a good idea to try them.

7.4 Employability

An understanding of modern computer operating systems, data transmission principles, protocols, security issues and computer network operation, and an ability to work with or analyse them as appropriate, is to be expected of all prospective computing professionals. The emphasis on systems and network administration within this module will also prepare students for potential careers in the area of IT support.

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

This module requires active learning. There will be a weekly lecture (2 hours) to introduce new concepts and to support the weekly labs, but most of the active learning will take place in the lab sessions and in private study time. Assessment will take place during the lab sessions.

9. STUDENT EVALUATION

This module has been generally well received by students in past years, with recurrent some grumbles about too many assessments. (Although this didn't crop up so much last year 2015/16). The teaching staff feel that it is important to try to encourage to work steadily, In particular the practical work requires students to combine new material with previously assimilated skills and cannot be achieved by a marathon reading session in the days before an exam.

10. LEARNING RESOURCES

10.1 Core Materials

No single textbook has been found that is suitable as the core learning resource for this module. Instead, students will be given handouts and directed to appropriate web resources; these will be regarded as the core learning material for this module.

10.2 Optional Materials

Bradford, R. **The Art of Computer Networking**
Prentice Hall (Pearson), 2007.

Comment: This is an easy to read, well-illustrated textbook on computer networking. It doesn't go into a lot of detail, which may or may not be regarded as a good thing.

Hailperin, M. **Operating Systems and Middleware**
Cengage Learning (formerly Thomson), 2007.

Comment: This is an interesting textbook that covers the subject area in quite a modern way. It's very nicely written, with good diagrams.

Kurose, J. & Ross, K. **Computer Networking**
Pearson, 2013.

Comment: This is a very authoritative, comprehensive and up-to-date textbook on computer networks. This would be a great choice as a core textbook for a Level 5 module that is dedicated to computer networks.

Saltzer, J. & Kaashoek, M. **Principles of Computer Systems Design**
Morgan Kaufmann, 2009.

Comment: This textbook is – as the authors claim – quite unique, in the sense that it focuses primarily on principles and abstractions. The chapter titles reflect this; it has chapter headings such as *The Design of Naming Schemes* and *Fault Tolerance*. This would be a great book to read *after* first gaining a reasonable level of knowledge about how computer systems work by other means.

Silberschatz, A., Galvin, P. & Gagne, G. **Operating System Concepts (9th Ed.)**
Wiley, 2013.

Comment: This is the latest edition of a very authoritative, comprehensive and up-to-date textbook that is the basis of numerous courses on operating systems in universities all around the world.

Stallings, W. **Operating Systems: Internals and Design Principles (6th Ed.)**
Prentice Hall (Pearson), 2009.

Comment: William Stallings is a very well-known and well respected author of computer science textbooks, and like most of his books this one is very readable, comprehensive and authoritative.

Stuart, B. **Principles of Operating Systems**
Cengage Learning (formerly Thomson), 2009.

Comment: This is yet another very up-to-date and authoritative textbook. It explains how various specific operating systems work – including UNIX, Inferno and others – but in my opinion this makes the book relatively hard to digest. The reliance on code snippets to explain the operation of various operating system functions gives well-informed readers a good understanding of how things work, but I suspect that many readers of this textbook will find these code snippets difficult to understand.

Tanenbaum, A. **Modern Operating Systems (3rd Ed.)**
Prentice-Hall, 2008.

Comment: Andrew Tanenbaum is another very well-known author, and like the Stallings book (above) this one is equally readable, comprehensive and authoritative.

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