London South Bank University | School of Engineering

Module Guide

System Administration and Maintenance

CSI_5_SAM

https://my.lsbu.ac.uk

Division of Informatics and Computer Science

Level 5

1. MODULE DETAILS

Module Title:	System Administration and Maintenance
Module Level:	5
Module Reference Number:	CSI_5_SAM
Credit Value:	20
Student Study Hours:	200
Contact Hours:	52
Private Study Hours:	110
Pre-requisite Learning (If applicable):	None
Co-requisite Modules (If applicable):	None
Course(s):	BSc Information Technology
Year and Semester	Year 2 Semester1
Module Coordinator:	Paul Carden
MC Contact Details (Tel, Email, Room)	020-7815-7432, cardenp@lsbu.ac.uk, FW-112
Teaching Team & Contact Details (If applicable):	
Subject Area:	System Administration
Summary of Assessment Method:	60% Coursework, 40% Online Exam
External Examiner appointed for module:	[TBA: the name, position and institution of the subject area external examiner appointed for the module]

2. SHORT DESCRIPTION

This module provides the practical tools and techniques required to design, implement and manage information systems and associated configuration items in an effective manner using appropriate frameworks and tools.

3. AIMS OF THE MODULE

This module will provide you with the knowledge and skills to analyse, design and manage the users, data and hardware which are required for the efficient operation of IT systems. You will also study wider issues such as effective planning of IT operations to minimise business risk due to large-scale technical or environmental problems.

You will have the opportunity to gain the technical knowledge and skills required to study for the professional certification often required by employers.

4. LEARNING OUTCOMES

4.1 Knowledge and understanding.

On completion of the module you will be able to:

- Describe the configuration and operation of typical system management procedures.
- Critically evaluate the benefits of a range of solutions to system design and management problems (Maps to: 2.2.3 a1-a3)

4.2 Intellectual skills.

On completion of the module you will be able to:

- Use sources of information to improve your knowledge and understanding.
- Discuss work with your lecturers in a reflective and rationale manner. (Making changes to work following reflection.)
  (Maps to: BCS 2.2.1 a1-a5, a7-a9; 2.2.3 a1-a3)

4.3 Practical skills.

On completion of the module you will be able to:

- Catalogue and manage services using industry tools
- Manage a helpdesk support system.
- Write reports supported by academic reading and argument.
  (Maps to: BCS 2.2.1 b1-b4; 2.2.3 a4-a6)

4.4 Transferable skills.

On completion of the module you will be able to:

- Recognise what needs to be done to meet deadlines and satisfy others' expectations. (Time management and self-awareness.).
  (Maps to: BCS 2.2.1 a1-a9)

5. ASSESSMENT OF THE MODULE

Formative Assessment – does not go toward the final mark

Formative assessment will take different forms, such as:

- verbal feedback on tutorial activities via Microsoft teams
- observation and questioning to provide instant feedback as the student takes part in learning activities via Microsoft teams group or private meeting (synchronous) or via email (asynchronous)

Summative Assessment: EXAM 40% : COURSEWORK 60%

5.1 Exam - worth 40% of the module grade

(Maps to: BCS 2.2.1 a1-a5, a7-a9; 2.2.3 a1-a3)

An online open book exam, four questions from six. There will be a known question on a topic related to the Cloud and Cybersecurity event that was postponed which has to be researched before the exam.

5.2 Coursework - Summative Assessment worth 60% of the module grade

(Maps to: BCS 2.2.1 a1-a5, a7-a9; b1-b4; c1-c2; 2.2.3 a1-a6)

5.2.1 Blog/Journal (40%)

A record of your learning on the module, using Tiddlywiki, or stored in a Word document or PDF – see the Tiddlywiki checklist on the VLE. It can contain writing from simple journaling to the complex synthesis of ideas over the course of the semester.

There is no prescriptive word count. Your submission should reflect engagement with the module**.

5.2.2 Technical Report (20%)

Expected to take the form of an individual written technical report (2000 words) on the a topic from the list supplied on the VLE.

6. INTRODUCTION TO STUDYING THE MODULE

Classes will be taught by a mixture of lectures, blended learning, laboratory sessions, on campus events, an industrial event and practical workshops

6.1 Overview of the Main Content

This module will cover the main aspects of current IT system administration and maintenance practices.

The module delivery plan is to try to include all of the following:

- System administration concepts
- Service strategy, design, transition, operation and continuous improvement
- Service cataloguing
- Innovative and disruptive technology adoption strategies
- Helpdesk operation
- Leveraging of cloud technologies
- Configuration item management – from peopleware to hardware and software

6.2 Overview of Types of Classes

There will be weekly online lectures using Microsoft Teams to introduce new concepts and lab sessions to support these with hands-on experience. Practical exercises will be demonstrated in online lab sessions and involve exploring the various technologies in use in 2020 by DevOps and ITIL ready enterprises.

6.3 Importance of Student Self-Managed Learning Time

Although much laboratory time will be dedicated to practical exercises, students will need to spend more time in independent study on this. In addition, the theoretical material delivered in lectures will require independent reading and study in order to grasp it fully and prepare for the examination.

6.4 Employability

Complex enterprise IT infrastructure requires approaches and tools for the management and implementation of associated services so that they are fit for purpose and fit for use. Students will design, implement and catalogue service-oriented systems and embedded processes ready for real world use. They will deliver these services in a campus-based setting. Also, they will be exposed to real-world contexts through attending an industrial event to foster confidence and knowledge of IT administration and maintenance in action.

7. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

The following outline is only indicative, the order and exact content of the lectures may vary according to unavoidable factors.

Week	Week Ending	Content	Labs
1	31 Jan	Introduction to the module	CPanel evaluation
2	7 Feb	ITIL part 1	Service desk design
3	14 Feb	ITIL part 2	Service desk set-up (to be revisited)
4	21 Feb	DevOps meets ITIL	Puppet configuration management
5	28 Feb	DevOps for innovation	Pop-up helpdesk preparation and rehearsal
6	6 Mar	Pop-up helpdesk event	
7	13 Mar	Cybersecurity in 2020	Cybersecurity 1
8	20 Mar	The cloud expo has been cancelled, so this session is going to be on the main topics from a similar event instead.	Cybersecurity 2
9	27 Mar	Networking 1	Practical Network System Design
10	3 Apr	Networking 2	Practical Network System Administration
	Easter Break		
11	24 Apr	Consolidate all previous learning for assessment completion	
12	1 May		
13	8 May		

9. STUDENT EVALUATION

The module is running for the first time this year so there is no previous evaluation to report.

10. LEARNING RESOURCES

Reading Materials

Ravicchandran – chapters 1-2 for the exam questions 2 and 5

Bicket – for reference

Pro Python system administration
Book - by Rytis Sileika - 2014 - **Core**

DevOps for digital leaders: reignite business with a modern DevOps-enabled software factory
Book - by Aruna Ravichandran; Kieran Taylor; Peter Waterhouse - 2016 - **Core**

The ITIL guide to software and IT asset management
Book - by David Bicket; Stationery Office (Great Britain) - 2018 - **Core**

DevOps Plays for Driving Innovation handout – Pages 1-30

In addition to textbooks, students will be expected to refer to web-based information sources as required..

NOTES

none