هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	System Administration
Course Code:	IT10801
Program:	Information Technology
Department:	Information Technology
College:	Computer Science and Information Technology
Institution:	Albaha University

Table of Contents

A. Course Identification

1. Credit hours: 3 hours
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: 8th level
4. Pre-requisites for this course (if any)**: None**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	22	50%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other (labs)**	22	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	22
2	**Laboratory/Studio**	22
3	**Tutorial**	
4	**Others** (specify)	
	Total	44

B. Course Objectives and Learning Outcomes

1. Course Description

The focus is on system administration, maintenance an integration including Linux and Windows operating system maintenance and troubleshooting through hardware and software foundation and concepts as well as system integration concepts and methods. Topics include operating systems, networking, security, troubleshooting methodology with emphasis on the university's computing environment, computer engineering, network engineering, software engineering.

2. Course Main Objective

Upon successful completion of the course, the student will be able to:

- Recognize how to install, use and configure operating systems (Windows and Linux) for functionality and to connect computers to networks.
- Prepare and setting up network file system on windows and Linux OS.
- Define computer security installation and maintenance methods.

- Create and manage user profile and group on windows and Linux OS
- Demonstrate deadline respect on assignments, work both independently and collaboratively, give and receive constructive comments and make presentations to their peers
- Illustrate capability to gather, interpret, and communicate information and concepts as well as communicate concepts and techniques in writing assignments, in class discussions.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Explain how to install, use and configure operating system for functionality and connect computer to network (on virtual machine)	**K1**
2	**Skills:**	
2.1	Create and manage user profile and group on windows and Linux OS.	**S2**
2.2	Prepare and setting up network file system in local network on windows and Linux OS.	**S5**
2.3	Explain how to setting up minimum security on Window and Linux OS.	**S4**
2.5	Use communication concepts and techniques in oral presentations in class discussion.	**S6**
3	**Values:**	
3.1	Adapt to work independently and collaboratively	**V1**

C. Course Content

No	List of Topics	Contact Hours
	Lectures	
1	Introduction to systems administration	2
	Part 1: Linux system administration	2
2	Installation and configuration on virtual machine on Linux environment	
3	Setting up services, creating user profiles and managing network file systems on on Linux environment	4
4	Setting up security on Linux environment	4
3	**Part 2:** Windows system administration	2
	Installation and configuration on virtual machine on Windows environment	
	Setting up services, creating user profiles and managing network file systems (on Active directory) on Windows environment	4
	Setting up security on Windows environment	4
	LAB	
1	Cockpit browser-based administration	4
2	User and group management under Linux	2
3	Installing and Configuring an NFS Server on Ubuntu	2
4	Setting up security under Linux (using iptables)	2
5	Process management commands and their execution.	2
6	Firewall configuration in Linux	2
7	Managing file systems under Windows	4
8	User and group management under Windows (Active directory)	4

Total	44

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Explain how to install, use and configure operating system for functionality and connect computer to network (on virtual machine)	- Lectures -Labs	- LabExam - Midterm
2.0	**Skills**		
2.1	Create and manage user profile and group on windows and Linux OS.	- Lectures - Labs	- Midterm - Final exam - LabExam
2.2	Prepare and setting up network file system in local network on windows and Linux OS.	- Lectures - Labs	- Final exam - LabExam - -Homework
2.3	Explain how to setting up minimum security on Window and Linux OS.	- Lectures - Labs	- Final exam - LabExam - -Homework
2.5	Use communication concepts and techniques in oral presentations in class discussion.	-Small groups	- Homework -classDiscussion
3.0	**Values**		
3.1	Adapt to work independently and collaboratively	-Small groups	- Homework -classDiscussion

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework and class discussion	10th week	15%
2	Midterm Exam	6th week	25%
3	Lab Exam	11th week	20%
4	Final Exam	12th week	40%
			100%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Faculty - 4 hours per week
- Teaching Assistant or Tutor – 2 hours per week

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Linux Bible, Christopher Negus, Christine Bresnahan 864 pages Publisher: Wiley; 8 edition (September 11, 2012) Language: English ISBN-10: 111821854X ISBN-13: 978-1118218549 • Active Directory: Designing, Deploying, and Running Active Directory, Brian Desmond, Joe Richards, Robbie Allen, Alistair G. Lowe-Norris Paperback: 738 pages Publisher: O'Reilly Media; Fifth Edition edition (May 28, 2013) Language: English ISBN-10: 1449320023 , ISBN-13: 978-1449320027
Essential References Materials	• Computer Science Curriculum 2013 – http://cs2013.org • Information Technology Curriculum 2017 - https://www.acm.org/binaries/content/assets/education/curricula-recommendations/it2017.pdf • ACM(Association for Computer Machinery) Curricula Recommendations - http://www.acm.org/education/curricula-recommendations • Communications of ACM (Association for Computer Machinery) - http://cacm.acm.org/ • Journal of the ACM - http://jacm.acm.org/ • ACM SIGCSE (Special Interest Group on Computer Science Education) bulletin -http://www.sigcse.org/Bulletin • ACM Transactions on Computing Education (TOCE) - http://toce.acm.org/
Electronic Materials	• Access to the Saudi Digital Library (SDL). • Using the learning management system of the university – Rafid System (https://lms.bu.edu.sa/). • ACM (Association for Computer Machinery) web site - http://www.acm.org/ • ACM SIGCSE (Special Interest Group on Computer Science Education) resource web site - http://www.sigcse.org/SIGresources • IEEE Computer Society web site - http://www.computer.org/portal/web/guest/home • Intel *The Journey Inside* web site (has a collection of interactive, online lessons about technology, computers, and society) - http://educate.intel.com/en/TheJourneyInside/ *Google Code University* Curriculum Resource web site - http://code.google.com/edu/resources/index.html
Other Learning Materials	• Windows OS and Linux OS "Resources for Teaching Binary Numbers" - http://blogs.msdn.com/b/alfredth/archive/2010/04/01/resources-for-teaching-binary-

2. Facilities Required

Item	Resources

Accommodation
(Classrooms, laboratories, demonstration rooms/labs, etc.)
	• A classroom or lecture hall with whiteboard.
	• A laboratory with computers that have installed Windows and Linux
	• An instructor computer station with
	  • High speed Internet connection;
	  • A desktop computer with system administration software installed;
	  • Power outlets for instructor's laptop plug-in;
	  • A digital image projection system with connection and switches to desktop computer, laptop computer and DVD/Blue Ray player.

Technology Resources
(AV, data show, Smart Board, software, etc.)
	• All students shall have
	  ▪ A computer with Windows and Linux (e.g as virtual machines)
	  ▪ High speed Internet connection;
	Power outlets for student's laptop plug-in.

Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	A laboratory with multiple computers, with a variety of operating systems: • Windows • Linux

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	• Students • Peer Reviewer • Program Leaders	• Survey (indirect) • Peer review (direct) • Class visit (direct)
Effectiveness of assessment	• Students • Exam Evaluation Committee • Course Coordinator	• Survey (indirect) • Exam Review (direct) • Review of course file (direct)
Extent of achievement of course learning outcomes	• Faculty • Program Leaders or Course Coordinator	• Exams (direct) • Exit Exams (direct)
Quality of learning resources	• Faculty • Students	• Survey (indirect)

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	