



T-104
2022

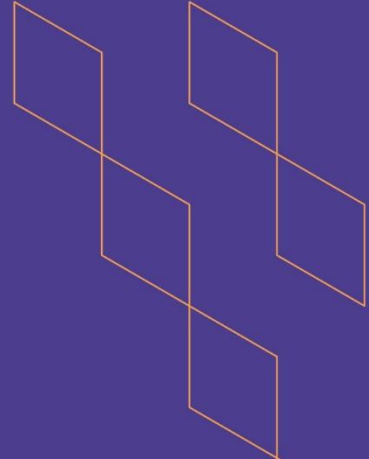
Course Specification





T-104
2022

Course Specification



Course Title: Computer Maintenance
Course Code: 2212 CIS
Program: Information Systems
Department: NA
College: Applied College
Institution: King Khalid University
Version: 1
Last Revision Date: 6 August 2023



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A. General information about the course:

Course Identification	
1. Credit hours:	2
2. Course type	
a.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input checked="" type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	3rd Level
4. Course general Description: This course will provide students a much-needed knowledge of computer system, operating systems networking, security, enabling them to identify and rectify the onboard computer hardware, software and network related problems. With the help of this course, the students will be able to troubleshoot & problem solve a wider variety of issues, ranging from networking and operating systems to mobile devices and security. The course will help students qualify for COMPTIA A+ Certification.	
5. Pre-requirements for this course (if any):	
6. Co- requirements for this course (if any):	
<p>In this course, Students will install, configure, optimize, troubleshoot, repair, upgrade, and perform preventive maintenance on personal computers and digital devices. Students will get hands on:</p> <ul style="list-style-type: none"> ● Identifying, using, and connecting hardware components and devices, including the broad knowledge about different devices. ● Install and support Windows OS including command line & client support. ● System configuration imaging and troubleshooting for Mac OS, Chrome OS, Android OS. ● Troubleshoot PC and mobile device issues including common OS, malware and security issues. ● Explain types of networks and connections including TCP/IP, WIFI and SOHO ● Troubleshoot real-world device and network issues quickly and efficiently ● Identify and protect against security vulnerabilities for devices and their network connections ● Install & configure laptops and other mobile devices and support applications to ensure connectivity for end- users ● Follow best practices for safety, environmental impacts, and communication and professionalism 	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	48	100





No	Mode of Instruction	Contact Hours	Percentage
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	16
2.	Laboratory/Studio	32
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	64



B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Understand the basic concepts of computer system architecture and its major components [operating systems, networking].	k1	Lectures + Lab	Exams, Assignments, Quizzes
1.2	Describe principles and techniques of computer System maintenance.	k2	Lectures + Lab	Exams, Assignments, Quizzes
2.0	Skills			
2.1	Explain various PC peripherals, their functionalities.	s1 s3	Lectures + Lab	Exams, Assignments, Quizzes
2.2	Diagnosis the errors, threats, and provide solutions.	s2 s4	Lectures, Lab, group discussion	Exams, Assignments, Quizzes
2.3	Installation and configuration processes in computer system.	s5 s6	Lectures, Lab, group discussion	Exams, Lab Assignments, Quizzes
3.0	Values, autonomy, and responsibility			
3.1	Participate effectively in maintaining computer hardware and updating the computer software system.	v1 v2	Lectures, Lab, Case Study	Exams, Assignments and presentation
3.2	Communicate with other about maintenance of enterprise computer systems to maximize the performance.	v3	Presentations, Lab, Groupwork	Exams, Assignments and presentation
3.3	Aid in following best practices for safety, environmental impacts, communication and professionalism.	v4	Presentations, Lab, Groupwork	Exams, Assignments and presentation



C. Course Content

No	List of Topics	Contact Hours
1	<p>Hardware:</p> <ul style="list-style-type: none"> • Motherboards, Processors, and memory • Storage devices and power supplies. • Peripherals and Expansion • Display Devices 	3
2	<p>Computer Networks:</p> <ul style="list-style-type: none"> • Network Fundamentals • TCP/IP • Wireless & SOHO Networks 	2
3	<p>Understanding Laptops and printers:</p> <ul style="list-style-type: none"> • Laptop Components • Compare and contrast laptop features. • Printer types and their associated imaging processes. 	2
4	<p>Operating Systems:</p> <ul style="list-style-type: none"> • Operating System fundamentals. • File systems • Virtualization 	3
5	<p>Security</p> <ul style="list-style-type: none"> • Security threats • Common prevention methods 	2
6	<p>Mobile Devices</p> <ul style="list-style-type: none"> • Basics of mobile operating systems • Network connectivity • Methods for securing mobile devices • Mobile device synchronization. 	2
7	<p>Understanding Operational Procedures</p> <ul style="list-style-type: none"> • Safety Procedures • Environmental impacts and purpose of environmental controls • Communication and professionalism 	2
Lab Topics		
1	<p>Hardware:</p> <ul style="list-style-type: none"> • Configure and apply BIOS settings • motherboard components • RAM types • CPU types • Storage devices and Power supply components • Expansion cards and interfaces 	5





	<ul style="list-style-type: none"> Identify connector types and associated cables configure various peripheral device types of display devices. 	
2	<p>Computer Networks:</p> <ul style="list-style-type: none"> network cables and connectors network devices and their functions and features. Networking tools Common TCP and UDP ports, protocols, and their purpose. Install, configure, and deploy a SOHO wireless/wired router using appropriate settings. 	4
3	<p>Understanding Laptops and printers:</p> <ul style="list-style-type: none"> Install and configure laptop hardware and components Install and configure printers <p>Printer maintenance</p>	4
4	<p>Operating Systems:</p> <ul style="list-style-type: none"> Install, and configure the OS Command line tools Operating System features and tools Control Panel utilities <p>Preventive and maintenance procedures appropriate tools</p>	5
5	<p>Security</p> <ul style="list-style-type: none"> Common Security methods Securing SOHO wireless and wired network 	4
6	<p>Troubleshooting OS and Security</p> <ul style="list-style-type: none"> Troubleshoot operating system problems with appropriate tools. Troubleshoot common security issues with appropriate tools and best practices 	5
7	<p>Hardware and network troubleshooting</p> <ul style="list-style-type: none"> Troubleshoot common problems related to motherboards, RAM, CPU and power with appropriate tools. Troubleshoot hard drives and RAID arrays with appropriate tools. Troubleshoot common video and display issues. Troubleshoot wired and wireless networks with appropriate tools. Troubleshoot printers with appropriate tools <p>Troubleshoot and repair laptop issues while adhering to the appropriate procedures.</p>	5



Total

48

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz 1	4	5
2.	Midterm Exam 1	7	10
3.	Practical Assessment	1 to 16	30
4.	Midterm Exam 2	12	10
5.	Quiz 2	14	5
6.	Final Exam	After week 16	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)





E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<p>i) Basic fundamental of computer by V. Rajaraman</p> <p>ii) A+ Guide to Hardware: manage: Maintaining: and Troubleshooting by Jean andrews LATEST VERSION ALSO AVAILABLE.</p> <p>i) Basic fundamental of computer by V. Rajaraman</p> <p>ii) A+ Guide to Hardware: Managing, Maintaining and Troubleshooting 5th Edition ISBN-13: 978-1435487383</p>
Supportive References	Top Level View of Computer Organization
Electronic Materials	www.lms.kku.edu.sa to access lab manual, announcements related to the course etc.
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> ▪ Lecture Rooms with data show ▪ Laboratories with full Network setup.
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> ▪ Data show ▪ Hardware lab and Kit Box
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students assessment	Course Teacher	Direct
Quality of learning resources	Program Supervisor, Quality Unit	Direct
The extent to which CLOs have been achieved	Course Teacher	Direct



Assessment Areas/Issues	Assessor	Assessment Methods
Other	Course Teacher, Quality Unit	Direct

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

