Republic of the Philippines
SULTAN KUDARAT STATE UNIVERSITY
Isulan, Sultan Kudarat
College of Computer Studies
SY 2024 - 2025

UNIVERSITY VISION

A trailblazer in arts, science, and technology in the region.

UNIVERSITY MISSION

The University shall primarily provide advanced instruction and professional training in science and technology, agriculture, fisheries, education, and other related fields of study. It shall undertake research and extension services and provide progressive leadership in its area of specialization.

UNIVERSITY GOAL

To produce graduates with excellence and dignity in arts, science, and technology.

UNIVERSITY OBJECTIVES

a. Enhance competency development, commitment, professionalism, unity, and true spirit of service for public accountability, transparency, and delivery of quality services.
b. Provide relevant programs and professional training that will respond to the development needs of the region.
c. Strengthen local and international collaborations and partnerships for borderless programs.
d. Develop a research culture among faculty and students.
e. Develop and promote environmentally sound and market-driven knowledge and technologies at par with international standards.
f. Promote research-based information and technologies for sustainable development.
g. Enhance resource generation and mobilization to sustain the financial viability of the university.

Program Objectives and their Relationship to University Objectives:

PROGRAM OBJECTIVES (PO)	UNIVERSITY OBJECTIVES						
A graduate of BS in Information Technology can:	a	b	c	d	e	f	g
a. administer competently the computer networks, hardware components, software applications, and maintenance;	/	/	/	/	/	/	/
b. analyze complex and real-world problems, and identify the computing requirements needed to give an appropriate solution;	/	/	/	/	/	/	/
c. design, implement, and evaluate computer-based systems, processes, components, or programs to address the problems with various constraints;	/	/	/	/	/	/	/
d. apply knowledge using current techniques, skills, tools, and practices necessary for the IT profession;	/	/	/	/	/	/	/
e. demonstrate professionalism in the social, environmental, and legal aspects of information technology.	/	/	/	/	/	/	/

1. Course Code : PT212
2. Course Title : Platform Technologies
3. Prerequisite : CC113
4. Credits : 3 UNITS

5. Course Description:

The course will encounter a variety of platforms in their careers. The role of the IT professional is to select, deploy, integrate, and administer platforms and components to support the organization's IT infrastructure. The students should equip knowledge and understanding of the fundamentals of hardware and software components of the computer and how they process the tasks behind the seen.

6. Course Learning Outcomes and Relationships to Program Objectives

Course Learning Outcomes	Program Objectives				
At the end of the semester, the students can:	a	b	c	d	e
a. understand the different platform technologies in the society;			/	/	/
b. learn the basic hardware components and their functionalities;	/				
c. learn how to manage the computer's memory and storage according to its specifications;	/	/			
d. understand the impact of computer evolution and the modern computing environment;	/				/
e. appreciate the importance of the operating system and its capabilities;	/	/	/	/	/
f. learn the different scheduling algorithm approaches;	/	/	/	/	/
g. experience the actual calculation of different jobs and processes according to the scheduling algorithm implemented;	/	/	/	/	/
h. know the security and protection measures to avoid damages against harmful viruses;	/	/	/	/	/
i. apply the technologies in real situations;	/	/	/	/	/
j. manifest creativity, love, and respect for others.					/

7. Course Content

Course Objectives, Topics, Time Allotment	Desired Student Learning Outcomes	Outcomes-Based Assessment (OBA) Activities	Evidence of Outcomes	Course Learning Outcomes	Program Objectives	Values Integration
TOPIC 1: SKSU VMGO, CLASSROOM POLICIES, COURSE OVERVIEW, COURSE REQUIREMENTS, GRADING SYSTEM (1 hour)						
1. Discuss the VMGO of the university, classroom and computer laboratory policies, the scope of the course, course requirements, and grading system	1.1 Students can be aware of and appreciate the university's VMGO, classroom, and computer laboratory	Individual participation by way of asking for clarification on VMGO, classroom policies and requirements, and grading system if deemed necessary	Teacher-student interaction	j	e	Value of appreciation

	policies, course overview, requirements, and grading system.					
TOPIC 2: INTRODUCTION TO PLATFORM TECHNOLOGIES (12 hours)						
2.1. Define platform technologies 2.2. Abstraction in platform technologies? 2.3. The main purpose of platform technologies 2.4. Difference between an application and a platform 2.5. Difference between a platform and software	The student can: 2.1. clearly explain the platform technologies by their definition and examples 2.2. discuss the abstraction in PT 2.3. explain the purpose of PT 2.4. discuss the application against the platform 2.5. discuss the software against the platform	Lectures and class discussions Uploading video recorded clips and other resource materials Posting of educational links intended for the specific topics	Assignments Written activities through discussion	a	c, d, e	Value of listening and appreciation Value of memory retention and familiarization

2.6. Types of Technology Platforms and their examples a. Operating Systems b. Computing Platforms c. Database Platforms d. Storage Platforms e. Application Platforms f. Mobile Platforms g. Web Platforms h. Content Management System Platforms i. Media Platforms j. API Platforms k. Analytics Platforms l. Security Management System Platforms m. Robotic Platforms n. Internet of Things Platforms o. Artificial Intelligence (AI) Platforms p. Gaming Platforms	2.6. identify the different types of technology platforms and their examples	Lectures and class discussions				
TOPIC 3: OPERATING SYSTEMS (15 hours)						
3.1. What is an Operating System?	The student can: 3.1. define Operating System	Lectures and class discussions	Group discussions	b, c, d, e	a, b, c, d, e	Value of listening and appreciation
3.2. Types of processors, memory, and storage	3.2. describe different types of processors, memory, and		Bring home activities			Value of unity and teamwork

	computer storage	Graphical illustrations and diagrams	Assignments			
3.3. Computer hardware organization	3.3. visualize how the computer organizes and controls its hardware components	Graphical representation and layouts	Quizzes			
3.4. Computer system components a. Static View of System Components b. Dynamic View of System Components	3.4. differentiate the static and dynamic view of system components	Layering				Value of good analysis
3.5. Types of Operating System a. Single-user, single-task b. Multi-user, multi-task c. Real-time Operating System d. Single-user, multi-tasking	3.5. distinguish different types of OS	Uploading video recorded clips and other resource materials				
3.6. User OS interface	3.6. picture out a variety of user OS interface					
3.7. Bootstrap Process	3.7. understand how the bootstrap program starts the process of execution					Value of appreciation

	when the computer is turned on					
3.8. Evolution of Operating System a. Batch systems b. Time-sharing systems c. Personal systems d. Parallel systems e. Distributed systems f. Real-time systems	3.8. appreciate the history of OS	Posting of educational links intended for the specific topics				
3.9. UNIX Operating System	3.9. grasp the advantage of UNIX OS					
3.10. Linux Operating System a. History of Linux b. Linux Distribution c. Linux User Interface d. Programming in Linux e. Linux on the Desktop f. Running Windows software on Linux g. Gaming on Linux h. Linux on Servers and Supercomputers i. Linux on Embedded Systems j. Linux on other devices k. Why should we use Linux?	3.10. appreciate the evolution of Linux OS and its capabilities in different variety of platform technologies					

3.11. A History of Windows	3.11. appreciate the evolution of Microsoft Windows OS					
TOPIC 4. MEMORY MANAGEMENT (12 hours)						
	The student can:					`
4.1. Computer memory	4.1. identify the hierarchical layering of memory, basic blocks of memory, and memory allocation	Lectures and class discussions	Graded Group Discussions Quiz	c	a, b	Value of appreciation
4.2. Memory Management Requirements a. Relocation b. Protection c. Sharing d. Logical Organization e. Physical Organization	4.2. understand the basic requirements of memory management					Value of familiarization
4.3. Types of Partitioning a. Fixed Partitioning b. Dynamic Partitioning c. Simple Paging d. Simple Segmentation e. Virtual Memory Paging f. Virtual Memory Segmentation	4.3. know the different types of partitioning					

TOPIC 5. PROCESS SCHEDULING ALGORITHMS (16 hours)						
5.1 CPU Scheduling 5.2 Scheduling algorithms a. First Come First Served (FCFS) b. Shortest Job First (SJF) c. Non pre-empted d. Pre-empted Shortest Remaining Time First (SRTF) e. Round Robin (RR) f. Round Robin with time quantum g. Priority scheduling	The student can: 5.1. learn how the OS decides which several tasks to take off a queue. 5.2. learn the different types of scheduling algorithms, how to draw the Gantt chart, and how to compute the average waiting time and average completion time.	Problem-solving Computation Writing a computer program Laboratory exercises	Assignments Quizzes Rubrics for Laboratory Exercises	f, g	a, b, c, d, e	Value of listening and appreciation Value of good analysis Value of mathematical ability
TOPIC 6. CLIENT/SERVER ARCHITECTURE (12 hours)						
6.1 What is Client/Server Computing	The student can: 6.1. discuss what and how client/server computing is.	Lectures and class discussions	Quiz	a, b, c, d, e, h, i, j	a, b, c, d, e	Value of exploration

6.2 Client/Server Architecture a. Communication Networks b. Client/Server Computing c. Application Function d. Application Components e. Middleware f. Types of Servers	6.2. understand the components of C/S, and visualize how communication networks connect clients and servers in the actual situation	Class participation Laboratory activities	Graded Laboratory Activities			Value of actualization
6.3 Systems with C/S Architecture	6.3. distinguish the different systems with C/S architecture	Layout designs and diagrams				
6.4 Client Server Model	6.4. identify where to push the application whether on the fat client or fat server	Group Activities				
6.5 Middleware Server	6.5. learn the importance of middleware servers in the C/S architecture setup					
6.6 Client/Server Building Blocks	6.6. discuss the purpose and functionalities of C/S					

	architecture fundamentals					
TOPIC 7. FILE-SYSTEM INTERFACE (12 hours)						
7.1 File Concept a. File Structure b. File Types c. File Attributes d. File Operations e. Open Files f. Open File Locking 7.2 Access Methods a. Sequential-Access File 7.3 Directory Structure a. Disk Structure b. A Typical File-System Organization c. Operations performed on the directory d. Levels of Directory 7.4 File Sharing	The student can: 7.1 be acquainted with the different file structures, types, attributes, and operations to manage and control files on the computer storage subject to access in the computer memory 7.2 understand the ways of accessing files from the disk storage to the memory allocation process 7.3 fully understand how to organize files and documents in the local drives and other sophisticated storage available on the cloud such as searching, creating folders, etc. 7.4 learn to share files and documents with	Lectures and class discussions Class participation Question and answer collaboration	Quiz Graded Laboratory Activities Graded score for question-and-answer activities	h, i, j	a, b, c, d, e	Value of exploration Value of logical analysis Value of unity and teamwork

7.5 File Protection a. File Access Lists and Groups	good practices on how to get away with viruses and non-ethical activities subjected to DPA constraints. 7.5 have a clear understanding of the privileges and restrictions of the shared files/documents they wanted to share on the cloud, and to other communication devices for proper protection of data sharing policies and interventions.	Uploading video recorded clips and other resource materials Posting of educational links intended for the specific topics				
TOPIC 8. PROCESS MANAGEMENT (10 hours)						
8.1. Process in Memory a. Process State b. Diagram of Process State 8.2. Process Control Block	The student can: 8.1. understand how the OS correctly runs multiple processes concurrently 8.2. learn the layers of information associated with each process	Lectures and class discussions Class participation Group activities Question and answer activities	Graded Recitation . Graded Score for Laboratory Work Activity Graded Hands-on Exam	b, c, e	a, b, e	Value of exploration Value of actualization

8.3. Multiprogramming a. Timesharing b. Process Scheduling c. Schedulers d. Process Creation e. Bootstrapping f. Fork System Call g. State Transition on Wait and Exit Calls	8.3. understand the method of operation in which multiple users with different programs interact simultaneously with the central processing unit.	Hands-on activities Presentation of program source code and output				Value of unity and teamwork
Total number of hours with laboratory (94 hours)						

Lectures	36 hours
Laboratory	54 hours
Examination	4 hours

8. Course Evaluation

Course Requirements: 80% running program

Grading System:

MID-TERM and **FINAL-TERM**

Participation/Attendance	5%
Quiz / Assignment	10%
Actual Hands-On Activities	35%
Exam	50%
TOTAL	**100%**

Schedule of Examination:

Midterm	:
Final Term	:
Classes End	:

References:

Textbooks:

1. Bi, Z, & Wang, X. "Platform Technologies." Computer-Aided Design and Manufacturing. Ed. Bi, Z, & Wang, X. ASME Press, 2020.
2. Blokdyk G. (2019) Technology Platforms A complete Guide 2019 Edition
3. Stallings W. (2005) Operating systems: Internals and Design Principles 8th edition. USA: Pearson Education, INC.
4. Tanenbaum A. and Bos, H. (2015). Modern Operating Systems. USA Pearson education, Inc
5. Mchoes, A. and Flynn, I (2014). Understanding Operating Systems 7th editions. USA: Cengage Learning.

Supplemental:

1. https://groups.google.com/g/cis2011/c/ixu-MwEJ8RU?pli=1
2. https://www.youtube.com/watch?v=GS6yIngO4eg
3. https://www.youtube.com/watch?v=pPLg3KWx48Q

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