College of Information Technology and Computing
Department of Information Technology

SYLLABUS
Course Title: **Platform Technologies**
Course Code: **IT213**
Credits: 3 units (2 hours Lecture, 3 hours Laboratory)

USTP Vision

A nationally-recognized Science and Technology (S&T) university providing the vital link between education and the economy

USTP Mission

- Bring the world of work (industry) into the actual higher education and training of the students;
- Offer entrepreneurs of the opportunity to maximize their business potentials through a gamut of services from product conceptualization to commercialization;
- Contribute significantly to the national development goals of food security and energy sufficiency through technology solutions.

Semester/Year: **1st Semester SY 2025-2026**

Class Schedule:
Bldg./Rm. No. ICT Building 9
IT2R1 T 10:00 AM - 1:00 PM M 8:00 AM - 12:00 PM
IT2R2 T 10:00 AM - 1:00 PM F 8:00 AM - 10:00 AM
IT2R3 T 1:00 PM - 4:00 PM M 12:00 PM - 4:00 PM
IT2R4 S 1:00 PM - 4:00 PM Th 6:00 PM - 8:00 PM
IT2R5 W 6:00 PM - 9:00 PM S 5:00 PM - 7:00 PM
IT2R6 W 10:00 AM - 1:00 PM M 12:00 PM - 4:00 PM
IT2R7 S 4:00 PM - 7:00 PM M 6:00 PM - 8:00 PM
IT2R8 W 1:00 PM - 4:00 PM M 8:00 AM - 12:00 PM
IT2R9 F 6:00 PM - 9:00 PM T 7:00 PM - 9:00 PM

Prerequisite(s): IT121 – Computer Programming 2
Co-requisite(s):

Instructor:
Jay Noel Rojo
Tong, Sigfred T.
Manaran, Harvey Jay
Bernadez, Ronel

Email: jaynoel.rojo @ustp.edu.ph
Mobile No.: (088)-857-1739 local 1153

Consultation Schedule: Monday 2:00 PM - 3:00 PM
Wednesday 1:00 PM - 4:00 PM
Bldg.Rm. No.: ICT Bldg. Department of Information Technology Office.
Office Phone No./Local: (088) 856 1739 local 1153

I. Course Description:

USTP Core Values:

A. **Unselfish Dedication** – Selfless commitment and complete fidelity towards a course of action or goal.
B. **Social Responsiveness** – Ethical/moral responsibility leading to corrective action on social issues and contributions for the betterment of the environment and the community's quality of life.
C. **Transformational Leadership** – Leading through inspiration and by example to foster positive change with the end goal of developing followers into leaders.
D. **Prudence –** Self-governance leading to circumspection and good judgment in the management of affairs and use of resources.

Program Educational Objectives:

PEO1: Graduates are proficient in the IT field and able to engage constantly in technological and professional advancement by pursuing a higher academic level and practicing quality improvement in their career and personal lives.

PEO2: Graduates are competent in generating new ideas and

This course examines operating system design concepts and Microsoft Windows and Linux operating systems. The course aimed to provide detailed information on Windows OS concepts such as security features, administration tools, the network environment, and TCP/IP, as well as providing a more fundamental knowledge of networks and network architecture. This course also introduces GNU/Linux system and basic installation.

II. Course Outcomes:

Course Outcomes (CO)	Program Outcomes (PO)														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
CO1: Describe the necessary components and functions of an operating system.	I						I	I	I	I		I		I	
CO2: Compare and contrast the memory management strategies of various popular operating systems.	I				I	I					I	I	I		
CO3: Install several current operating systems and validate that the installation were successful.	D	I			I	I	I	I		E	I	E	E		
CO4: Analyze operating system requirements and recommend an appropriate operating system to meet the requirement.	D	D	E	I	I	I		E	E			D		I	

III. Course Outline:

Allotted Time	Course Outcomes (CO)	Intended Learning Outcomes (ILO)	Topic/s	Suggested Readings	Teaching-Learning Activities	Assessment Tasks/Tools	Grading Criteria	Remarks
Week 1 August 7-8, 2025 2 hrs			**Course Orientation** - University's Vision and Mission	Student Handbook Course Syllabus				

innovations in Information Technology with more emphasis on technopreneurship, management, IT solutions and the likes through research collaborations.

PEO3: Graduates are practicing professionals in the field of Information Technology who can contribute significantly to human development, socio-economic transformation, and patriotic initiatives.

Program Outcomes:
a. Apply knowledge of computing, science, and mathematics in solving computing/IT-related problems through critical and creative thinking;

b. Use current best practices and standards in solving complex computing/IT-related problems and requirements;

c. Analyze complex computing/IT-related problems by applying analytical and quantitative reasoning; and define the computing requirements appropriate to its solution;

d. Identify and analyze user needs and take them into account in the selection, creation, evaluation and

			- CITC Goals and Objectives - Class Policies and Agreement - Grading System - Course Requirements - Course Syllabus, Course Outline Presentation					
Week 1 August 7-8, 2025 3 hrs	CO1	➔ utline the history of Operating System. ➔ xplain significant of OS.	**Operating System overview and principles**	1. Operating Systems, A systematic View 5th Edition by Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	1. Class Discussion 2. Concept Questions 3.Small Group Discussion 4.Oral recitations	Oral Question		
Week 2-3 August 11-22, 2025	**CO1, CO3**	➔ xplain the importance Concurrency ➔ iscuss multi	**1. Concurrency** a. Principles and Problems in Concurrency b. Multiprocessing	1. Operating Systems, A systematic View 5th Edition by	1.Lecture/ discussion 2.Group discussion (2 or 3)	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	

administration of computer based systems;

e. Design creatively, implement and evaluate different computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints;

f. Integrate effectively the IT-based solutions into the user environment with appropriate consideration for public health and safety, cultural, societal, and environmental concerns;

g. Select, adapt and apply appropriate techniques, resources, skills, and modern computing tools to complex computing activities, with an understanding of the limitations;

h. Function effectively as individual, or work collaboratively and respectfully as a member or leader in diverse development teams and in multidisciplinary and/or multicultural settings;

i. Assist in the creation of an effective IT project plan;

j. Communicate effectively in both oral and in written form by being able to deliver and comprehend instructions clearly; and present

10 hrs		processing in Operating System ➔ escribe scheduling and dispatch in Operating System	c. Distributed Processing **2. Scheduling and dispatch** a. Process Scheduling Queues b. Two-State Process Model c. Schedulers	Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	3.Oral recitations 4.Seatworks			
Week 4-5 August 25-Sept 5 , 2025 10 hrs	**CO1**	➔ xplain the significance of memory management. ➔ iscuss the importance of partition in OS	**1. Memory Management** a. Binding Logical to Physical b. Single Partition Allocation c. Compaction **2. Device Management**	1. Operating Systems, A systematic View 5th Edition by Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	

persuasively to diverse audience the complex computing / IT-related ideas and perspectives; k. Assess local and global impact of computing information technology on individuals, organizations, and society; l. Act in recognition of professional, ethical, legal, security and social responsibilities in the utilization of information technology; m. Recognize the need to engage in independent learning and be at pace with the latest developments in a specialized field in IT, with emphasis on Database Management and Information System; Network Design and Administration; and Computer Vision and Image processing for continual development as a computing professional; n. Participate in generation of new knowledge; or in research and development projects aligned to local and national development agenda or goals with the end view of contributing to the local and national economy; and o. Preserve and Promote "Filipino historical and cultural heritage"	Week 6 Sept 8-12 , 2025 5 hrs	**CO1**	➔ escribe the significance of Security in Operating System ➔ xplain the procedures in terms of protection in OS.	**Security and protection**	Operating Systems, A systematic View 5th Edition by Davis Rajkumar	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	
	Week 7-8 Sept 15-26 , 2025 10 Hours	**CO2, CO3**	➔ nstall OS components and office productivity tools. ➔ anage users and resources (files, directories, applications, etc.) through an	**File System**	Operating systems 4th Edition by Michael Palmer and Michael Walters	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	

		operating system.			5.Seatworks			
Week 9	**Sept 29-Oct 3, 2025**				**MIDTERM EXAMINATION**			
Week 10-11 Oct. 13-24, 2025 10 hrs	**CO2**	➔ nstallation of Linux OS and Server Configuration	**Real-time and embedded systems**	1. Operating Systems, A systematic View 5th Edition by Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	
Week 12 Oct. 27-31, 2025 5 hrs	**CO2**	➔ xplain the significant of fault tolerance ➔ xplain Correlated Software Failures	**Fault tolerance**	1. Operating Systems, A systematic Vivew 5th Edition by Davis Rajkumar 2. Operating	1.Reading assignments on the topics with questions to be answered and submitted	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	

			➔ anage the evaluation process of fault tolerance		systems 4th Edition by Michael Palmer and Michael Walters	2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks			
	Week 13-14 Nov. 3-7, 2025 10 hrs	**CO2 CO3**	➔ iscuss the significant of scripting in OS ➔ ifferentiate scripting and programming. ➔ ntroduction to Linux Shell and Shell Scripting	**Scripting**	1. Operating Systems, A systematic Vivew 5th Edition by Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	
	Week 15-16 Nov. 10-21, 2025	**CO2, CO3**	➔ iscuss three types of Virtualization ➔ nstall operating	**Virtualization**	1. Operating Systems, A systematic Vivew 5th Edition by	1.Reading assignments on the topics with questions to be	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	

10 hrs		system in the Computer.		Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks			
Week 17 Nov. 24-28, 2025 5 hrs	**CO1 CO3 CO4**	➔ emonstrate using Virtual Box ➔ nstall and troubleshoot OS and Application software	**Maintenance and Upgrading of Hardware and Software**	1. Operating Systems, A systematic Vivew 5th Edition by Davis Rajkumar 2. Operating systems 4th Edition by Michael Palmer and Michael Walters	1.Reading assignments on the topics with questions to be answered and submitted 2.Lecture/ discussion 3.Group discussion (2 or 3) 4.Oral recitations 5.Seatworks	Quiz Seatwork Laboratory Activity	Rubric for Lab Activity	
Week 18	**Dec 5-13, 2025**		**FINAL EXAMINATION**					

IV. Course Requirements:

1. Class standing (attendance, participation, etc.) policy:
   (a) Expected classroom behavior (may want to develop this with the students, e.g., What guidelines m are appropriate for behavior and participation in a large class
   Students who participate in class recitations will earn points.
   (b) Ground Rules for participation in discussions or activities.
   Only one student may talk at a time.

2. Course Readings/Materials:
   (a) Titles, authors, and editions of textbooks and other materials, required and recommended
      1. Operating Systems, A systematic View 5th Edition by Davis Rajkumar
      2. Operating systems 4th Edition by Michael Palmer and Michael Walters
   (b) URLs for online resources

https://www.tutorialspoint.com/operating_system/os_process_scheduling
https://web.cs.wpi.edu/~cs3013/c07/lectures/Section08-Memory_Management.pdf
https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19950018573.pdf

3. Assignments, Assessment, and Evaluation

(a) Policy concerning homework (grading, posting, late policy, etc.)
Students may share ideas as they work on their assignments but the submitted assignments must be their own work.

(b) Policy concerning make-up exams
No special examination is given unless a student has valid reasons stipulated in the Student Handbook Article 3: Excused Absences.

(c) Policy concerning late assignments/requirements

- Assignments: no assignment for a particular date, will have a grade of zero (0).
- Projects: late submission of projects will have a corresponding consequence. There will be a deduction of points for every day that the project submission will be late.

(d) Preliminary information on term papers or projects, with due dates

- Projects for midterm and finals are given ahead of time along with its corresponding due dates, rubrics, and other requirements for the completion of the projects.
- Non-submission of projects does not mean you

(e) List of assignments that will impact the final grade and % weight given each

- Portfolio: grade will be part of the PIT.

(f) Description in detail of grading processes and criteria (how many quizzes, tests, papers; weighting of each; amount of homework, etc.) or the GRADING POLICY

Grading System

Lecture Grade (67%)	
Performance Item/Criteria	***%***
Class Performance Item	10%
Quizzes (All quizzes, prelim and pre-final exams)	40%
Major Exams (i.e, Midterm and Final Exams)	30%
Performance Innovative Task / Project	20%
TOTAL	**100%**
Laboratory Grade (33%)	
Performance Item/Criteria	***%***
Laboratory Exercises/Reports	30%

Laboratory Major Exam	40%
Hands on Exercises	30%
TOTAL	**100%**

Criteria and Weights in computing the FINAL GRADE (FG)

(a) If the **final exam coverage** are all topics discussed from the beginning of the semester:

Final Grade (FG) = 1/3 MTG + 2/3 FTG;

MTG – Midterm grade
FTG – Final term grade

(b) If the fina**l exam coverage** are all topics during the final term only

Final Grade (FG) = 1/2 MTG + 1/2 FTG

(Passing Percentage is 70%)
Ex. In a 10-item quiz, obtaining 7 points would be equivalent to a passing score.

Disclaimer:
Every attempt is made to provide a complete syllabus that provides an accurate overview of the subject. However, circumstances and events make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the student.

Rubrics

Rubrics for Research Assignments

Criteria	Content	Authenticity	Originality	Total
	The content aligns with the given topic.	The work is original and not produced by any AI generation tool.	The content is original and not plagiarized.	
Percentage(%)	20%	30%	50%	100%

Rubric for Exercises

Criteria	Functionality	Creativity	Originality	Total
	The app is 100% working based on specifications with no errors and bugs found	The interface is well designed and the colors are pleasing to the eye.	The code base in written with originality and not generated or aided by any AI apps, copied from. Source code is not a duplicate from	

			other students answers. Validation process will be conducted thru oral questions.	
Percentage (%)	50%	20%	30%	100%

Rubrics for Projects

Criteria	Functionality	Creativity	Collaboration	Total
	The app is fully functional according to the specifications, with no errors or bugs detected.	The interface is well-designed, with colors that are visually appealing.	The team collaborates effectively using Git, ensuring regular merges, commits, and pushes.	
Percentage (%)	40%	20%	40%	100%

Prepared by:

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Instructor

Recommending Approval:

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Dean, CITC