Republic of the Philippines

DAVAO ORIENTAL STATE UNIVERSITY

"A university of excellence, innovation, and inclusion"

SYLLABUS (Professional Subject)

Document Code No.			
FM-DOrSU-ODI-09a			
Issue Status	Rev No.	Effective Date	Page No.
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FACULTY OF COMPUTING, ENGINEERING & TECHNOLOGY
ITP 141 -SYSTEM ADMINISTRATION AND MAINTENANCE

1st Semester; SY 2024-2025

VISION

"A university of excellence, innovation, and inclusion"

MISSION

1. To elevate knowledge generation, utilization and distribution;
2. To promote inclusive sustainable development through research and extension-based higher quality education, technical vocational skills, responsive to the needs of local and global community; and
3. To produce holistic, creative and inclusive human resource which are responsive and resilient to global challenges while maintaining strong sense of nationhood.

CORE VALUES

1. God-centered and humane
2. Critical Thinking and Creativity
3. Discipline and Competence
4. Commitment and Collaboration
5. Resilience and Sustainability

GRADUATE OUTCOMES

1. Research-oriented and innovative;
2. Empowered with sense of professionalism;
3. ICT enabled;
4. Effective communicator; and
5. Endowed with Filipino and universal values.

FACULTY GOAL/S:

Focus on student centered programs that would provide a nurturing environment tailored to engineering, information communication technology, industrial technology, pure and applied mathematics; promoting the students' creativeness, critical thinking, communication skill and collaboration with a unified sense of purpose and direction towards innovation.

PROGRAM EDUCATIONAL OBJECTIVES (PEO) IN RELATION TO THE COLLEGE MISSION

PROGRAM EDUCATIONAL OBJECTIVES (PEO)	UNIVERSITY MISSION		
	1	2	3
1. Engaged or established an ICT enabled/ICT based business startups 5 years after graduation and onwards;	✓	✓	✓
2. Employed in an ICT based or enabled organizations;	✓	✓	✓
3. Work effectively and independently in multi-disciplinary and multi-cultural teams (PQF level 6 descriptor) (Graduate Outcomes: CS07, IS07, IT08),	✓	✓	✓
4. Design and develop computing solutions using a system-level perspective (Graduate Outcomes: CS03-05, IS04-05, IT05)	✓	✓	✓
5. Articulate and discuss effectively both orally or in writing in English or Filipino the latest developments in ICT for utilization. (Basis: PQF level 6, IT13, IT10, IT07)			✓
6. Become globally competent, innovative and socially and ethically responsible computing professionals engaged in life-long learning endeavors and generation of new knowledge or in research and development projects. (Basis: ITE PSG – 5.3 Program Goals, 6.4 Common to Horizontal Type of School per CMO 46 s. 2012, IT12)	✓	✓	✓
7. Preserve and promote Filipino historical and cultural heritage". (Based on RA 7722)			✓

STUDENT OUTCOMES (SO) IN RELATION TO THE PROGRAM EDUCATIONAL OBJECTIVES (PEO)

STUDENT OUTCOMES	PEO						
	1	2	3	4	5	6	7
1. Apply knowledge of computing, science, and mathematics appropriate to the discipline			✓			✓	
2. Understand best practices and standards and their applications				✓		✓	
3. Analyze complex problems, and identify and define the computing requirements appropriate to its solution				✓		✓	
4. Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems	✓		✓	✓		✓	
5. Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints				✓		✓	
6. Integrate IT-based solutions into the user environment effectively		✓		✓		✓	
7. Apply knowledge through the use of current techniques, skills, tools and practices necessary for the IT profession	✓		✓			✓	
8. Function effectively as a member or leader of a development team recognizing the different roles within a team to accomplish a common goal	✓		✓			✓	
9. Assist in the creation of an effective IT project plan		✓		✓		✓	
10. Communicate effectively with the computing community and with society at large about complex computing activities through logical writing, presentations, and clear instructions					✓	✓	✓
11. Analyze the local and global impact of computing information technology on individuals, organizations, and society						✓	✓
12. Understand professional, ethical, legal, security and social issues and responsibilities in the utilization of information technology.					✓	✓	✓
13. Recognize the need for and engage in planning self-learning and improving performance as a foundation for continuing professional development	✓		✓	✓	✓	✓	✓

COURSE INFORMATION

1. **COURSE NUMBER** : ITP 141
2. **COURSE TITLE** : Systems Administration and Maintenance
3. **PRE-REQUISITE** : ITP 134 Information Assurance & Security 2
4. **CO- REQUISITE** : NONE
5. **NUMBER OF UNITS** : 3.0
6. **CONTACT HOURS** : 36 Hours Lecture and 54 Hours Laboratory
7. **COURSE DESCRIPTION** : The purpose of this course is to teach experienced Windows and Linux users the techniques, methods, and policies used in Windows and Linux system administration. This course teaches students how to install, configure and maintain a Windows and Linux system in a networked environment. Students will not only learn to perform basic administrative tasks such as adding and managing users, creating and maintaining file systems, developing and implementing a security policy, and performing software installation and package management, but will also learn to perform Windows and Linux network-related tasks, including installing and supporting SSH, NFS, DNS, DHCP, Web Server, and other server management services.

COURSE LEARNING OUTCOMES

CLO1	Evaluate various operating systems and recommend a particular operating system to satisfy given needs.
CLO2	Summarize several methods to push a custom configuration of applications to users.
CLO3	Prioritize a list of administrative activities for IT, to support an organization's mission statement.
CLO4	Justify how you would allocate resources for the various administrative domains.

ALIGNMENT OF COURSE LEARNING OUTCOMES TO STUDENT OUTCOMES

Course Outcomes	Level	Course Outcomes Satisfied	Course Outcomes Proficiency Assessment Through
CLO1	D	SO4, SO6, SO7, SO11,SO12	Homework, Lab. Exer., Student Presentation & Final Project
CLO2	D	SO4, SO6, SO7, SO11,SO12	Homework, Lab. Exer., Student Presentation & Final Project
CLO3	D	SO4, SO6, SO7, SO11,SO12	Homework Lab. Exer., Student Presentation & Final Project
CLO4	D	SO4, SO6, SO7, SO11,SO12	Homework, Lab. Exer., Student Presentation & Final Project

Legend: Level

/ I / = **Introductory Course**. This course introduces students to the SO.

/ E / = **Enabling Course**. This course enables the students to eventually achieve the indicated SO.

/ D / = **Demonstrative Course**. This course requires students to demonstrate the achievement of the indicated SO.

COURSE OUTLINE

Time Frame	Topic/Task	Desired Learning Outcomes	Teaching and Learning Processes/ Teaching and Learning Activities (TLAs)	Satisfied Course Learning Outcomes (CLO)	Student Assessment
Week 1	• University Vision, Mission, Core Values and Graduate Outcome • Program Educational Objectives, Student outcomes, Course Content Requirements and Academic policies • Basic GAD and Sexual Harassment	• Recognize DOrSU's Vision, Mission, Core Values, Graduate Outcomes • Understand the Program Educational Objectives, Student Outcomes, Course Content Requirements and Academic policies • Recognize the importance of GAD and prevent the occurrence of sexual harassment.	• Online Meeting	None	• None -
Week 1-8	**Module 1: Applied Operating Systems and Applications** *Topic 1 -Operating System (Windows & Linux):* • Installation and configuration • Maintenance (Updates and repositories)	• Install at least two current operating system both Windows and Linux. • Discuss the importance of system configuration for an organization. • Describe the importance of system maintenance for an organization. • Identify situations in which a system needs to be reconfigured. • Describe when a system requires maintenance.	• (Lecture)Online or remote engagements either video conferencing, email, messengers and using eLMS • (Laboratory) Face-to-face engagement for Application Demonstration/Activities like Media and audio/visual Material Simulation • Offline activities	CLO1	• Homework • Group Presentation • Laboratory Exercises • Written Examination

	• Server services (ex. Active Directory, Samba, DNS, FTP, HTTP/s SSH, etc.) • Server and Client services • Support	• Distinguish between server and client services. • Identify situations in which a support organization needs to be consulted in resolving operating system issues.			
	Topic 2 - Applications (Windows & Linux): • Installation and configuration • Maintenance (Updates and repositories) • Server services (ex. Databases, Web, Network, etc.)	• Install at least two current server applications for both Windows and Linux. • Discuss the benefits of custom configuration of applications. Describe the importance of application maintenance for an organization. • Identify when an application meets the needs of an organization. • Describe when an application no longer meets the needs of an organization.	• (Lecture)Online or remote engagements either video conferencing, email, messengers and using eLMS • (Laboratory) Face-to-face engagement for Application Demonstration/Activities like Media and audio/visual Material Simulation • Offline activities	CLO2	• Homework • Group Presentation • Laboratory Exercises • Written Examination
Week 9-14	**Module 2: Administrative Activities** • Content Management • Content deployment (file system planning & structure)	• Describe the need for managing IT resources. • Identify situations in which administrative activities are required. • Identify situations which interfere with administrative activities.	• (Lecture)Online or remote engagements either video conferencing, email, messengers and using eLMS • (Laboratory) Face-to-face engagement for Application Demonstration/Activities like Media and audio/visual Material Simulation	CLO3	• Homework • Group Presentation • Laboratory Exercises Written Examination

	• Server Administration and Management • User and group management • Backup management • Disaster Recovery • Resource management • Automation management (Bash Scripting and PowerShell) • Site management notebook & documentation • System support • User support & education	• Explain the need for policies governing IT systems. • Explain why users need to be trained on IT systems and policies. • Enable to understand Linux bash scripting and Windows PowerShell. • Describe the Linux command scripting environment. • Apply the knowledge in Linux scripting in support to automate the services	• Offline activities		
Week 15-18	**Module 3: Administrative Domains** • Web domain • Network domain • Security domain • OS domain • Application domain • Support domain	• Describe the responsibilities common to the various administrative domains. • Describe the responsibilities unique to each of the various administrative domains. • Identify responsibilities in each domain that support activities in other domains.	• (Lecture)Online or remote engagements either video conferencing, email, messengers and using eLMS • (Laboratory) Face-to-face engagement for Application Demonstration/Activities like Media and audio/visual Material Simulation • Offline activities	CLO4	• Homework • Group Presentation • Laboratory Exercises • Written Examination

	• Virtualization Domain				
Learning Assessment Final Assessment [Project Based]					

REFERENCES

Books

1. Copper, L. (2019). Internet Infrastructure. New York: Larsen & Keller.
2. Dulaney, E. (2018). Linux All-in-One for dummies 6e. John Wiley & Sons, Inc.
3. Nugraha, L. (2024, June 25). *Bash scripting tutorial for Beginners*. Hostinger Tutorials. https://www.hostinger.ph/tutorials/bash-scripting-tutorial
4. Perrot, S. (2019). Windows Server 2019 & Powershell all-in-one. For Dummies.
5. Schaumann, J. (2022). Principles of System Administration. NetMeister.org
6. Sentika, A. (2024, August 20). *60 essential linux commands*. Hostinger Tutorials. https://www.hostinger.ph/tutorials/linux-commands

Other references

7. DOSCST Student Handbook

GRADING SYSTEM

Students must pass 50% or an above weighted requirement on average in order to pass the course. Each assignment with a weighted category contributes an equal amount to the specified percentage. The remaining assignments contribute an equal amount to the remaining percentage.

		Grading Scale					
Formative Assessment		100	98	***1.00***	71	67	***2.50***
■ Homework	(15%)	97	92	***1.25***	66	62	***2.75***
■ Group Presentation	(15%)	91	87	***1.50***	61	50	***3.00***
Summative Assessment		86	82	***1.75***	49	45	***4.00***
■ Laboratory Exercises	(30%)	81	77	***2.00***	44	0	***5.00***
■ Final Project	(40%)	76	72	***2.25***			
TOTAL	**100%**						

COURSE REQUIREMENTS

- Homework
- Group Presentation
- Laboratory Exercises
- Final Project

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CLASS POLICIES

1. Blended Learning (Lecture – Online / Laboratory – Face to Face)
2. Zero-based 50% grading policy is observed.
3. Make sure to enroll in the Online LMS use by the faculty or join the online group to be created by the faculty solely for the subject.
4. If the student needs special accommodations or require additional assistance to fully participate and be successful in this class, it is encouraged to consult with the faculty as soon as possible. The faculty strongly desires that each and every student will be able to achieve their goals in this class.
5. Subject activities like (quiz, homework and etc.) will be done in blended mode (online/offline submission of requirements).
6. For important class discussion, it will be through online meeting using Google Meet or the students will be given self-paced reading reference/instructional materials via Offline USB file access.
7. A rate of INC/4.0/5.0 shall be given to those who got a final grade below 50%. The student is required to submit the needed requirements in order to pass the subject for the conditional grade 4.0.

Prepared by:	**Reviewed and Recommended by:**	**Approved by:**
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Faculty	Program Head	Dean
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