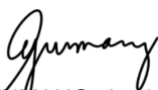

 <div>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</div>		Course Code and Title  CPE172P Cybersecurity and Cyberspace – An Introduction	
		Curriculum: 2022-2023	Page 1 of 12
Prepared by:  NIERE-YUMANG, Analyn N.	Approved by:  LINSANGAN, Noel B.	Revision Date: February 2024	Effectivity Date: February 2024

VISION

Mapúa University, a global leader in education, shall foster sustainable socio-economic growth in society through innovation, digital transformation, and lifelong education.


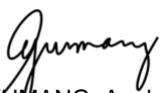

MISSION

- 1. The University shall provide a learning environment in order for its students to acquire the attributes that will make them globally competitive.
- 2. The University shall engage in publishable and/or economically viable research, development, and innovation.
- 3. The University shall provide state-of-the-art solutions to problems of industries and communities.

PROGRAM EDUCATIONAL OBJECTIVES		MISSION		
		1	2	3
Within five years after graduation, graduates of the Computer Engineering program should have:				
1.	Undertaken, singly or in teams, projects that show ability to solve complex engineering problems.	✓	✓	✓
2.	Had substantial involvement in projects that take into consideration safety, health, environmental concerns and the public welfare, partly through adherence to required codes and laws.	✓	✓	✓
3.	Demonstrated professional success via promotions and/or positions of increasing responsibility.	✓		
4.	Demonstrated life-long learning via progress toward completion of an advanced degree, professional development/continuing education courses, or industrial training courses.	✓	✓	✓
5.	Demonstrated technical expertise, professionalism, and ethics in ICT, computer hardware and software systems development, entrepreneurship or other related fields in the practice of computer engineering for the advancement of industry and society.	✓		✓

ABET Student Outcomes		Program Educational Objectives				
		1	2	3	4	5
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	✓			✓	✓
2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	✓	✓		✓	✓
3	An ability to communicate effectively with a range of audiences	✓	✓			✓
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts		✓	✓	✓	✓
5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	✓	✓	✓	✓	✓
6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	✓	✓		✓	✓
7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	✓	✓	✓	✓	✓

PTC and CHED Student Outcomes		Program Educational Objectives				
		1	2	3	4	5
A	An ability to apply knowledge of mathematics and science to solve complex engineering problems	✓			✓	✓
B	An ability to design and conduct experiments, as well as to analyze and interpret from data	✓	✓		✓	✓
C	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, in accordance with standards;	✓	✓		✓	✓
D	An ability to function on multidisciplinary teams	✓	✓	✓	✓	
E	An ability to identify, formulate, and solve complex engineering problems	✓			✓	✓
F	An understanding of professional and ethical responsibility			✓	✓	✓
G	An ability to communicate effectively	✓	✓			✓
H	The broad education necessary to understand the impact of engineering solutions in the global and societal context		✓		✓	✓
I	A recognition of the need for, and an ability to engage in life-long learning				✓	✓
J	A knowledge of contemporary issues	✓	✓		✓	✓

		Course Code and Title	
		<b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
Prepared by:		Curriculum:	Page 2 of 12
 NIERE-YUMANG, Analyn N.		2022-2023	
Approved by:		Revision Date:	Effectivity Date:
 LINSANGAN, Noel B.		February 2024	February 2024


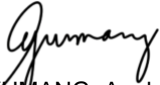

K	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	✓	✓	✓
L	Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects in multidisciplinary environments	✓		
M	Understand at least one specialized field of Computer Engineering practice		✓	✓

### COURSE SYLLABUS

- Course Code:** CPE172P
- Course Title:** Cybersecurity and Cyberspace – An Introduction
- Pre-requisite:** 3<sup>rd</sup> Year Standing
- Co-requisite:** None
- Credit:** 3 units / 7.5 hours per week
- Course Description:** Covers foundational knowledge and essential skills for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used to protect businesses.
- Course Outcomes (COs) and Relationship to Student Outcomes**


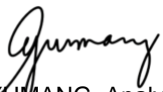

Course Outcomes After completing the course, the student must be able to:	Student Outcomes* ABET							Student Outcomes* PTC and CHED												
	1	2	3	4	5	6	7	a	b	c	d	e	f	g	h	i	j	k	l	m
<b>Module 1 - Cybersecurity: A World of Experts and Criminals</b>																				
1. Understand the players in the cybersecurity world and the motivation of cyber criminals and cybersecurity specialists.																				
<b>Module 2 - The Art of Protecting Secrets and Ensuring Integrity</b>																				
2. Build skills in security management, controls, protection, and mitigation technologies.																				
<b>Module 3 – Linux Unhatched</b>																				
3. Apply knowledge in Linux as it is used in cybersecurity to carry out system penetration testing and assess the vulnerability of a system.																				

- Level: I – Introduced; R – Reinforced; D – Demonstrated**

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b> 2022-2023	<b>Page 3 of 12</b>
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b> February 2024	<b>Effectivity Date:</b> February 2024


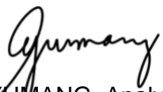

8. Outcome-Based Modular Course Design

Course Title	Credit Units	Module Code	Module Title	Lec Hrs.	Lab Hrs.	Weeks	Credit Units	Pre-requisites	May be taken if remedial
Cybersecurity and Cyberspace – An Introduction	3	CPE172PM1	Cybersecurity: A World of Experts and Criminals	12	18	4	1		Yes
		CPE172PM2	The Art of Protecting Secrets and Ensuring Integrity	12	18	4	1		Yes
		CPE172PM3	Linux Unhatched	9	13.5	3	1		Yes


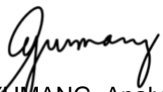

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b> 2022-2023	Page 4 of 12
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b> February 2024	<b>Effectivity Date:</b> February 2024

9. Course Coverage


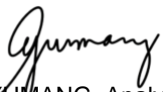

Week	Topic	Session	TLA			AT			Learning Objects	CO
			F2F (onsite)	Synchronous Online	Asynchronous Online	F2F (onsite)	Synchronous Online	Asynchronous Online		
Module 1: Programming Logic and Design Basics										
1	Mission and Vision of Mapua University	1	Lecture/ Discussion			CW1.A			Reading Material: NETACAD: Introduction to Cybersecurity	CO1
	Laboratory Activity Demonstration									
	Orientation and Introduction to course	2			Reading Assignment					
The Need for Cybersecurity				Recorded Video Lecture						

		<b>Course Code and Title</b>  <p style="text-align: center;"><b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction</p>	
		<b>Curriculum:</b>  <p style="text-align: center;">2022-2023</p>	<p style="text-align: center;">Page 5 of 12</p>
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b>  <p style="text-align: center;">February 2024</p>	<b>Effectivity Date:</b>  <p style="text-align: center;">February 2024</p>


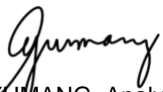

	Cybersecurity: A World of Experts and Criminals	3	Lecture/ Discussion  Laboratory Activity Demonstration			CW1.B			Netacad Resource: Laboratory or Packet Tracer Activity at Chapter 2	CO1
	The Cybersecurity Cube	4			Reading Assignment  Recorded Video Lecture					
3	Cybersecurity Threats, Vulnerabilities and Attacks	5	Lecture/ Discussion  Laboratory Activity Demonstration			CW1.C			Netacad Resource: Laboratory or Packet Tracer Activity at Chapter 3	CO1
		6			Reading Assignment  Recorded Video Lecture			CW2		
4	Module 1 Assessment	7				QZ1 PE1				CO1
		8						Completion		

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b>  2022-2023	Page 6 of 12
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b>  February 2024	<b>Effectivity Date:</b>  February 2024

Module 2: The Art of Protecting Secrets and Ensuring Integrity										
5	The Art of Protecting Secrets	9	Lecture/ Discussion  Laboratory Activity Demonstration			CW3.A			Netacad Resource: Laboratory or Packet Tracer Activity at Chapters 4 and 5	CO2
	The Art of Ensuring Integrity	10			Reading Assignment  Recorded Video Lecture					
6	The Five Nines Concept	11	Lecture/ Discussion  Laboratory Activity Demonstration			CW3.B			Netacad Resource: Laboratory or Packet Tracer Activity at Chapters 6 and 7	CO2
	Protecting a Cybersecurity Domain	12			Reading Assignment  Recorded Video Lecture					

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b> 2022-2023	Page 7 of 12
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b> February 2024	<b>Effectivity Date:</b> February 2024

7	Becoming a Cybersecurity Specialist	13	Lecture/ Discussion  Laboratory Activity Demonstration			CW3.C			Netacad Resource: Laboratory or Packet Tracer Activity at Chapter 8	CO2
		14			Reading Assignment  Recorded Video Lecture			CW4		
8	Module 2 Assessment	15				QZ2 PE2				CO2
		16						Completion		
Module 3: Linux Unhatched										
9	Understand the basics of the Linux Command Line Interface (CLI) in manipulating files.	17	Lecture/ Discussion  Laboratory Activity Demonstration			CW5.A			Netacad Resource: Laboratory Activity	CO3
		18			Reading Assignment  Recorded Video Lecture					

 <div>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</div>		Course Code and Title	
		CPE172P Cybersecurity and Cyberspace – An Introduction	
Prepared by:  NIERE-YUMANG, Analyn N.		Curriculum: 2022-2023	Page 8 of 12
Approved by:  LINSANGAN, Noel B.		Revision Date: February 2024	Effectivity Date: February 2024

10	Basic security, identifying user types and managing file permissions and ownership	19	Lecture/ Discussion Laboratory Activity Demonstration			CW5.B			Netacad Resource: Laboratory Activity	CO3
		20			Reading Assignment Recorded Video Lecture			CW6		
11	Module 3 Assessment	21				QZ3 PE3				CO3
		22						Completion		



10. Lifelong-Learning Opportunities

Explains the significance of the role of cyber criminals and their motivations and how to become a cybersecurity specialist who helps defeat the cyber criminals that threaten the cyber world.

11. Contribution of Course to Meeting the Professional Component

Engineering Topics – 100%

12. Prescribed E-Book and Courseware

Cisco Networking Academy – Netacad

- Introduction to Cybersecurity
- Cybersecurity Essentials
- Linux Unhatched

13. Course Evaluation

Student performance will be rated based on the following:

Module 1

Assessment Tasks		Weight	Minimum Average for Satisfactory Performance
CO 1	CW1 (PT or Lab Activity)	20	14
	CW2 (Netacad Chapter Exams)	10	7
	QZ1	30	21
	PE1	40	28
		100	70

Module 2:

Assessment Tasks		Weight	Minimum Average for Satisfactory Performance
CO 2	CW3 (PT or Lab Activity)	20	14
	CW4 (Netacad Chapter Exams)	10	7
	QZ2	30	21
	PE2	40	28
		100	100

Module 3:

Assessment Tasks		Weight	Minimum Average for Satisfactory Performance
CO 3	CW5 (PT or Lab Activity)	20	14
	CW6 (Netacad Chapter Exams)	10	7
	QZ3	30	21
	PE3	40	35
		100	100

The module grades will correspond to the weighted average scores shown below.

Average	Module Grade	Average	Module Grade
0.00 – 34.99	5.00	82.00 – 84.99	2.00
35.00 – 69.99	IP	85.00 – 87.99	1.75
70.00 – 72.99	3.00	88.00 – 91.99	1.50
73.00 – 75.99	2.75	92.00 – 95.99	1.25
76.00 – 78.99	2.50	96.00 - 100.00	1.00
79.00 – 81.99	2.25	For approved medical reasons only	I

The module grade average will be the weighted average of the module grades based on the credit units of each module:


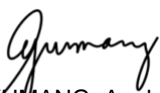

$$\text{Module Grade Average} = \frac{\sum_{i=1}^{\text{no of modules}} (\text{credit unit})_i (\text{module grade})_i}{\text{total credit units of the course}}$$

The course grade will be determined from the module grade average using the table below:

Module Grade Average (MGA)	Course Grade
1.0 ≤ MGA ≤ 1.14	1.0
1.15 < MGA ≤ 1.25	1.25
1.26 < MGA ≤ 1.50	1.5
1.51 < MGA ≤ 1.75	1.75
1.76 < MGA ≤ 2.00	2.0
2.01 < MGA ≤ 2.25	2.25
2.26 < MGA ≤ 2.50	2.5
2.51 < MGA ≤ 2.75	2.75
2.76 < MGA ≤ 3.0	3.0
5.00	5.00

14. Other Course Policies


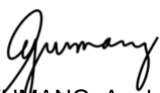

- a. Attendance
- According to CHED policy, students’ total number of absences should not be more than 20% of the total number of meetings or 9 hours for a three-unit-course. Students incurring more than 9 hours of unexcused absences automatically gets a failing grade regardless of class standing

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b>  2022-2023	<b>Page 11 of 12</b>
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b>  February 2024	<b>Effectivity Date:</b>  February 2024

- b. Guided Learning Output  
Guided learning outputs through various worksheets in each clusters of topics are assigned to the students. Problems encountered in the worksheets will be discussed in class.
- c. Written Examination  
Exams will be given face to face for Tri-X, Bio-X and Blended modes and online for UOX.
- d. Course Portfolio  
Selected guided learning outputs and examinations are to be compiled and collected before the end of the term. The selection is based on statistical data gathering (lowest, median, highest). Guided learning outputs and examinations with marks lowest, median, and highest must be photocopied and must be given back to the instructor for course portfolio keeping.
- e. Language of Instruction  
Lectures, discussion, and documentation will be in English. Written and spoken work may receive a lower mark if it is, in the opinion of the instructor, deficient in English.
- f. Dress and Grooming Codes  
All of us have been instructed on the Dress and Grooming Codes of the University.
- g. Academic Integrity Policy  
It is the student’s responsibility to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Any of the following sanctions may be imposed to any student who is found guilty of committing online academic dishonesty:
  - a. Failed mark in the course.
  - b. Suspension for a period of less than one term, with or without community service.
  - c. Suspension for a period of one term or more, with or without community service.
  - d. Non-readmission to the University.
  - e. Dismissal from the University.
  - f. Expulsion.

The following are considered academic dishonesty:

1. Using another MyMapua email address to login to any platform (such as BlackBoard and Coursera) with or without permission.
2. Asking or hiring someone else to do their exams, homework, Coursera course, papers, projects or other academic requirements.
3. Recording and saving copies of exam questions or answers, or answer keys for distribution.
4. Receiving copies of exam questions or answers, or answer keys to an exam from someone who has already taken it.
5. Plagiarizing or the unethical act of stealing the thoughts of another without proper citation or reference, acquiring information from the Internet without acknowledging the author, copying from another student’s work without permission and submitting it as own work.
6. Massive, pre-meditated, organized online cheating using instant messaging/email during a quiz or exam.
7. Any form of dishonesty in peer-reviewed assignments/submissions (e.g. Coursera peer-graded submissions).
8. Engaging in any activities that will dishonestly improve results, or dishonestly improve or damage the results of others.
9. Any other form of dishonesty or cheating in any assessment or course requirement.

 <b>SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING</b>		<b>Course Code and Title</b>  <b>CPE172P</b> Cybersecurity and Cyberspace – An Introduction	
		<b>Curriculum:</b>  2022-2023	<b>Page 12 of 12</b>
<b>Prepared by:</b>  NIERE-YUMANG, Analyn N.	<b>Approved by:</b>  LINSANGAN, Noel B.	<b>Revision Date:</b>  February 2024	<b>Effectivity Date:</b>  February 2024

All students who will violate the Academic Integrity Policy of the university will be given zero mark for the exam or for the activity and will be given a failing grade for the course. He or she will also be referred to the Prefect of Discipline for appropriate sanction.

- h. Consultation Schedule  
Consultation schedules with the Professor are posted outside the EECE Faculty room and in the School web-page (<http://eece.mapua.edu.ph>). It is recommended that the student first set an appointment to confirm the instructor’s availability.
- i. Appeal system  
All appeals on student assessment must be made by the concerned student within one week after the return of the assessed student work.

In case the student is not satisfied, no later than one week after the decision of the faculty has been made, he can elevate the appeal to the program chair or dean in case there is no program chair. The decision of the program chair or dean is final. The faculty must abide with the moderated decision of the program chair or dean.

- j. Use of generative AI  
It is expected that students will adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, misrepresenting one’s work, and/or inappropriately collaborating. This includes the use of generative AI tools that have not been cited or documented or authorized. Students will also be expected to adhere to the prescribed professional and ethical standards of the profession/discipline for which the student is preparing. Any student who engages in academic dishonesty or who violates the professional and ethical standards for the profession/discipline for which the students is preparing, may be subject to academic sanctions as the University’s academic Integrity Policy.

**15. Course Materials to be Provided to Students**

- 15.1. Syllabus
- 15.2. Lecture Materials
- 15.3. Video Lectures
- 15.4. Course Schedule

**16. Committee Members**

Caya, Meo Vincent C.  
Cruz, John Paul T.  
Enteria, Mario S.  
Hong, Jonel  
Lee, Marvin V.  
Niere-Yumang, Analyn P.  
Padilla, Dionis A.  
Singson, Lowell B.  
Sutayco, Mark Jayson Y.  
Sy, Jojo T.