BS INFORMATION TECHNOLOGY

2nd Semester, S.Y 2020 – 2021

COURSE GUIDE

COURSE DESCRIPTION AND OVERVIEW

This course introduces the concept of data communication and computer networking. such as protocols, topologies, hardware, and network operating systems. It then provides coverage of the most important concepts such as TCP/IP, Ethernet, wireless transmission, and security. The course will prepare the students to select the best network design, hardware, and software for their environment. They will also have the skills to build a network from scratch and maintain, upgrade, and troubleshoot an existing network.

The course content will be delivered through flipped classes where students are required to attend one-hour face-to-face classes and four-hour remote classes per week.

Learning materials in both the print and electronic forms will be provided ahead of time. Thus, you should prepare for discussions by reading these pre-assigned materials.

Remote classes will be done online. Learning materials such as modules and e-books will be given also for offline activities and assessments. Online discussions will be done asynchronously and synchronously. Online learning materials and assessments will be assigned and be accessed through the official Learning Management System (LMS) of Pangasinan State University.

COURSE INFORMATION

COURSE CODE	Net101
COURSE TITLE	NETWORKING 1 (Fundamentals of Networking)
COURSE CREDIT	3
PRE-REQUISITE COURSE	CC 101 - Introduction to Computing
CLASS HOURS	
COURSE SCHEDULE	

FACULTY INFORMATION

NAME	Christopher A. Rodriguez
DESIGNATION	
EMAIL ADDRESS	
WEBSITE	
CONSULTATION HOURS	
OFFICE LOCATION	

COURSE GOALS AND LEARNING OUTCOMES

Networking is a lecture and laboratory course. The goals set for this course require that the students gain the computer networking knowledge as well as the current connectivity technologies and the necessary framework which includes the key steps associated with the communication process.

At the end of the course, students are expected to:

1. Understand basic computer network technology.
2. Be familiar with the basic protocols of computer networks, and how they can be used to assist in network design and implementation
3. Understand and build the skills of subnetting and routing mechanisms.
4. Analyzes various types of configurations and upgrading.
5. Plan and design a network infrastructure.

COURSE REQUIREMENTS

* Mid-Term Exam
* Final Exam
* Quizzes
* Participation/Recitation
* Home-Based Assignments and Homework
* Laboratory Outputs
* Case Study Presentation

COURSE LEARNING MATERIALS

A. Books

- Ciccarelli, Patrick (2013). Introduction to Networking Basics. 2nd Edition. Wiley.
- Cisco Networking Academy (2016). Introduction to Networks Companion Guide v5.1. 1st edition. Cisco Press PTG
- Robertazzi Thomas G. (2017) Introduction to Computer Networking. Springer.

eBook

- "Computer Networks and Security." *Encyclopedia of Management*, 8th ed., vol. 1, Gale, 2019, pp. 161-168. *Gale eBooks*, link.gale.com/apps/doc/CX7617900058/GVRL?u=phpsu&sid=GVRL&xid=25ffdb6c. Accessed 29 Jan. 2021.
- "Routing." *Computer Sciences*, edited by K. Lee Lerner and Brenda Wilmoth Lerner, 2nd ed., vol. 4: Electronic Universe, Macmillan Reference USA, 2013, pp. 239-241. *Gale eBooks*, link.gale.com/apps/doc/CX2761000302/GVRL?u=phpsu&sid=GVRL&xid=34e895c5. Accessed 29 Jan. 2021.
- "TCP/IP." *Computer Sciences*, edited by K. Lee Lerner and Brenda Wilmoth Lerner, 2nd ed., vol. 4: Electronic Universe, Macmillan Reference USA, 2013, pp. 259-262. *Gale eBooks*, link.gale.com/apps/doc/CX2761000308/GVRL?u=phpsu&sid=GVRL&xid=d96c9acf. Accessed 29 Jan. 2021.
- Network Protocols. (2013). In K. L. Lerner & B. W. Lerner (Eds.), *Computer Sciences* (2nd ed., Vol. 2, pp. 150-154). Macmillan Reference USA. https://link.gale.com/apps/doc/CX2761000125/GVRL?u=phpsu&sid=GVRL&xid=1dc8c9d9
- Local Area Networks (LANs). (2017). In V. L. Burton, III (Ed.), *Encyclopedia of Small Business* (5th ed., Vol. 2, pp. 687-689). Gale. https://link.gale.com/apps/doc/CX6062700357/GVRL?u=phpsu&sid=GVRL&xid=d9736cdd

Website

https://www.guru99.com/data-communication-computer-network-tutorial.html

ASSESSMENT AND GRADING

$$\text{Final grade} = \frac{\text{midterm grade} + \text{final term grade}}{2}$$

Midterm grade = 40% midterm exam
30% attendance/recitation/quizzes
30% home-based requirements/online exercises

Final term grade = 40% final exam
30% attendance/recitation/quizzes
30% home-based requirements/online exercises

COURSE POLICIES AND EXPECTATIONS

Lecture Class Policies (Residential Class)

1. Please wear your face masks at all times. Bring your alcohol, soap, ballpen, paper, and other materials. Strictly no borrowing of things.
2. Please stay home if you are unwell.
3. Attendance in the class signifies readiness to participate in class discussions and activities.
4. A student is responsible for his/her absence.
5. A student will be automatically marked DRP (Dropped) after eight (8) consecutive absences.
6. Requirements must be submitted within the designated date of submission.
7. NO CELL PHONES OR ELECTRONIC DEVICES AT ANY TIME. All school rules will be followed as stated in the student handbook
8. Late work: Deductions will be given however; leniency will be observed.
9. Others (agreed upon by the class)

Lecture Class Policies (Online Class)

1. Wear a decent casual dress during the web conference.
2. No foul words during online discussions.
3. Observe punctuality and courtesy (the group of 5 individuals per batch; usually group leaders)
4. Private conversations during web conferencing are not allowed.
5. Respect shall be observed for the teacher and students
6. Cheating and plagiarism not tolerated
7. On-time submission of requirements as agreed during class orientation

Laboratory Class Policies

1. No laboratory gown; no attendance; no performance of the activity
2. No playing of music
3. No food or drinks allowed in the lab
4. Late work: Deductions will be given however; leniency will be observed.
5. Attendance in the laboratory implies a prior reading of procedures indicated in the manual
6. Cheating on a test or assignment will result in a grade of zero for all involved.
7. Data for lab reports must be taken during the lab. Copying of lab data after the lab is not allowed. Each student is responsible for individual lab reports unless specifically stated by the instructor.

Additional Information:

1. A Microsoft Teams Chat will be created for the subject specifically which will be used for immediately answering queries.
2. A Microsoft Teams group will be created for the posting of announcements, syllabus, assignments, rubrics, directions, laboratory manuals, videos, or links of instructional materials.

3. All assignments shall be submitted to the MS Teams account.
4. All documents and/or photos shall be renamed bearing your name and the activity (e.g. Net_CAR_A1) for purposes of monitoring of submission and on-time passing.

COURSE OUTLINE (SCHEDULE OF TOPICS, READINGS, AND ASSIGNMENTS)

Week	Module	Learning Materials	Activity	Assignment	Assessment
WEEK 1	Introduction and Course Orientation VMGO Quality Policy Classroom Policies LMS Orientation Remote Learning Preferences	Course Guide Syllabus Students Handbook LMS Video Tutorial	Remote Learning / Module Online Class		
WEEK 1	**Module1: Basics of Computer Networking** • What is a Computer Network? • Advantages of a Computer Network • Computer Network Components • Unique Identifiers of Network • Other Important Network Components • Uses of Computer Networks • Disadvantages of using Computer Networks	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Module Online Class		Quiz Interactive Discussion Homework
WEEK 2	**Module 2: Types of Computer Network** • Important Types of Computer Networks • PAN (Personal Area Network) • LAN • WAN • MAN • Other Types of Networks	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Module Online Class		Quiz Interactive Discussion Homework Activities/Works
WEEK 3	**Module 3: Network Topology** • Types of topology • How to select a network topology	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Module Online Class		Quiz Interactive Discussion Homework Activities/Works
WEEK 4 – 6	**Module 4: OSI Model** • History of OSI Model • Characteristics of OSI Model • 7 Layers of the OSI Model • Interaction Between OSI Model Layers • Protocols supported at various levels • Advantages and Disadvantages of the OSI Model	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Modular Online Class		Quiz Interactive Discussion Activities/Works
WEEK 7 – 9	**Module 5: TCP/IP Model** • TCP Characteristics • Four Layers of TCP/IP model • The Network Interface Layer • Differences between OSI and TCP/IP models • Most Common TCP/IP Protocols	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Modular Online Class		Quiz Interactive Discussion Homework Activities/Works

	• Advantages and Disadvantages of the TCP/IP model				
	MIDTERM EXAMINATION				
WEEK 10-13	**Module 6** **IP Address** • Types of IP address • Types of Website IP Addresses • IP Address Classification Based on Operational Characteristics • IP Packet Header • IP Packet Classes	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Modular Online Class		Hands-on Demo Laboratory Laboratory Activity Project Presentation
WEEK 14-16	**Module 7** **Cabling** • Straight Through Cables vs Crossover Cables • Ethernet Cable types and Categories	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Modular Online Class		Hands-on Demo Laboratory Laboratory Activity Project Presentation
WEEK 17-19	**Module 8** **Routing Protocols** • Types of Routing Protocols • Purpose of Routing Protocols • Routing Protocols Metrics • Classful Vs. Classless Routing Protocols	Learning Materials: Module E – book Book Web – linked Platform: Official Virtual Classroom Social Media	Remote Learning / Modular Online Class		Hands-on Demo Laboratory Laboratory Activity Project Presentation
	FINAL EXAMINATION				