



**OUTCOMES-BASED EDUCATION (OBE) COURSE SYLLABUS IN**  
**ITP 422 – NETWORKING 1**

Date revised/enhanced: November, 2020

<b>I. School Year/Semester</b>	SY 2020-2021, 2 <sup>nd</sup> Semester	
<b>II. University</b>	Vision: Mission  Goal  Core Values Institutional Outcomes:	A green university globally engaged in island research and innovations for societal advancement. Foster excellence, holistic, outcomes-based education compliant with the requirements of diverse world market and contribute to the development of productive and value-laden lives. Uphold the tradition of excellence in instruction, research, extension and production functions in an eco-friendly environment. Respect, Integrity, Social Responsibility, Excellence, Commitment A. A Professional who is morally upright, socially responsible and globally employable B. A Leader and Innovator who inspires others and is committed to social transformation and national development C. An Environmental Advocate committed to research, extension and production initiatives
<b>III. College/Campus</b>	College of Information and Communications Technology/ Main Campus	
<b>IV. Program/Degree</b>	Bachelor of Science in Information Technology (BSINFOTECH)	
<b>V. Program Outcomes</b>	A. Articulate and discuss the latest developments in the specific field of practice. B. Effectively communicate orally and in writing using both English and Filipino. C. Work effectively and independently in multi-disciplinary and multi-cultural teams. D. Act in recognition of professional, social and ethical responsibility. E. Preserve and promote “Filipino historical and cultural heritage”. F. Apply knowledge of computing science, and mathematics appropriate to the discipline. G. Understand best practices and standards and their applications. H. Analyze complex problems, and identify and define the computing requirements appropriate to its solution. I. Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. J. Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints. K. Integrate IT-based solutions into the user environment effectively. L. Apply knowledge through the use of current techniques, skills, tools and practices necessary for the IT profession.	



	<p>M. Function effectively as a member or leader of a development team recognizing the different roles within a team to accomplish a common goal.</p> <p>N. Assist in the creation of an effective IT project plan.</p> <p>O. Communicate effectively with the computing community and with society at large about complex computing activities through logical writing, presentations, and clear instructions.</p> <p>P. Analyze the local and global impact of computing information technology on individuals, organizations, and society.</p> <p>Q. Understand professional, ethical, legal, security and social issues and responsibilities in the utilization of information technology.</p> <p>R. Recognize the need for and engage in planning self-learning and improving performance as a foundation for continuing professional development.</p> <p>S. Participate in the generation of new knowledge or in research and development projects</p> <p>T. Support local, regional and national development plans along education, environment, socio economic, health, gender and development, science and technology.</p>
<b>VI. Course Code/Title</b>	ITP422 / Networking 1
<b>VII. Course Description</b>	This course emphasizes the knowledge and application of basic concepts of networking technology. It presents the OSI model, industry standards, network topologies, IP addressing, subnet masking, networking components, routing protocols, and basic network design with laboratory experience.
<b>VIII. Course Credit</b>	3 units
<b>IX. Prerequisite</b>	ITP322 - Integrative Programming and Technologies 1
<b>X. Contact Hours</b>	5 hours / week (2 hours lecture, 3 hours laboratory)



XI. Course Outcomes	At the end of the course, the students shall be able to:																									
	COs	Description	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T				
	CO1	Describe the data communications and network models, topologies, protocols, standards and architectures.	√			√		√	√	√				√												
	CO2	Describe necessary hardware and components used to establish communication between multiple networks and analyses the effect of various topologies, applications and devices on network performance.	√			√		√	√	√				√												
	CO3	Analyze routing algorithms protocols, process routing tables, and configure routers for proper orientation of an efficient network	√			√		√	√	√				√												

## XII. Course Outline/Learning Plan

POs	COs	Desired Learning Outcomes	Course Content/ Subject Matter	Textbooks/ References	Teaching and Learning Activities (TLAs)	Assessment Tasks	Instructional Resources/ Materials	Time Table (Hours)
A D F G H L	CO1 CO2	At the end of the lesson the students shall be able to:  1. Explain the basics terminologies used in networking. 2. Differentiate data communication systems and its components.	<b>A – Networking Basics</b>  1. Introduction to Networking 2. Network Infrastructure 3. Switches, Routers, and VLANs 4. Servers and Virtualization 5. Cloud Computing	Kurose, James, 2017 Computer Networking: A Top-Down Approach, 7 <sup>th</sup> Edition  Lowe, Doug, 2018, Networking All-in-One, 7 <sup>th</sup> edition, John Wiley & Sons, Inc., NJ 07030-5774	<b>Face-to-face Instruction</b>  • Lecture • Brainstorming • Interactive discussion  <b>On-line Learning</b> through Learning Management System	• Quizzes • Homework/ Assignment • Activities	• Module • LMS • PC/ Laptop/ Cellphones • Internet Connectivity	18



					Consultation through SMS or online via the Messenger or LMS			
A D F G H L	CO3	1. Identify the different types of topologies and protocols. 2. Evaluate standard protocols used in networking. 3. Implement subnetting	<b>B – Networking Protocols</b>  1. Networking Protocols and Standards 2. TCP/IP and the Internet 3. IP Addresses 4. Subnetting 5. Routing 6. DHCP 7. DNS 8. TCP/IP Tools and Commands	Kurose, James, 2017  Lowe, Doug, 2018	<b>Face-to-face Instruction</b>  • Lecture • Brainstorming • Interactive discussion • Problem Solving Exercise  <b>On-line Learning</b> through Learning Management System  Consultation through SMS or online via the Messenger or LMS	• Quizzes • Homework/ Assignment • Activities • Problem Solving	• Module • LMS • PC/ Laptop/ Cellphones • Internet Connectivity	24
<b>MID-TERM EXAMINATION</b>								<b>3.0</b>
A D F G H L	CO1 CO2	1. Create a network plan. 2. Identify what kind of server is needed.	<b>C – Planning a Network</b>  1. LAN 2. WAN 3. Server Architecture	Kurose, James, 2017  Lowe, Doug, 2018	<b>Face-to-face Instruction</b>  • Lecture • Brainstorming	• Quizzes • Homework/ Assignment • Activities	• Module • LMS • PC/ Laptop/ Cellphones • Internet	20



		3. Explain the basics of virtualization	4. Virtualization Architecture 5. Storage Architecture		<ul style="list-style-type: none"><li>• Interactive discussion</li></ul> <b>On-line Learning</b> through Learning Management System  Consultation through SMS or online via the Messenger or LMS		Connectivity	
A D F G H L	CO2 CO3	1. Create network cables 2. Install network cables, switches and routers 3. Explain how VPN works 4. Setup network printers	<b>D- Implementing a Network</b>  1. Network Hardware 2. Wireless Networks 3. Windows Clients 4. Mac Networking 5. Network Printers 6. Virtual Private Networks	Kurose, James, 2017  Lowe, Doug, 2018	<b>Face-to-face Instruction</b>  <ul style="list-style-type: none"><li>• Lecture</li><li>• Brainstorming</li><li>• Interactive discussion</li></ul> <b>On-line Learning</b> through Learning Management System  Consultation through SMS or online via the Messenger or LMS	<ul style="list-style-type: none"><li>• Quizzes</li><li>• Homework/ Assignment</li><li>• Activities</li></ul>	<ul style="list-style-type: none"><li>• Module</li><li>• LMS</li><li>• PC/ Laptop/ Cellphones</li><li>• Internet Connectivity</li></ul>	22
FINAL EXAMINATION								3.0



<b>XIII. Suggested Readings and References</b>	A. Tutorials Point (2014), Data Communications and Computer Network, Tutorials Point Pvt. Ltd. B. Ghai, Neha (2013), Network Security, S.K. Kataria & Sons, New Delhi C. Murali, C. (2012), Data Communications and Computer Networks, Fillip Learning, Bangalore D. Sharma, et al. (2012), A Complete Guide to Computer Networks, Laxmi Publications Pvt. Ltd., NewDelhi, India E. Wu Chwan-Hwa, (2014) Introduction Computer Networks and Cybersecurity																						
<b>XIV. Course Requirements</b>	1. Written outputs in this course such as assignments, quizzes, seatwork, and problem set or exercises, must be submitted before the end of the semester or special permission must be requested from the Instructor/Professor before the due date. 2. Take Midterm and Final examinations at the campus																						
<b>XV. Course Policies</b>	<b>Online Policies</b> 1. Students are required to enroll in the Learning Management System (LMS). All materials relevant to the course will be uploaded in the LMS, including assignments and quizzes. 2. Compliance to requirements shall be uploaded through the LMS on or before the set schedule; unless otherwise the mode and the date of submission are revised. 3. Students are required to join the group chat through the Messenger; updates/announcement shall also be posted through this medium as an additional platform of dissemination. 4. Plagiarism is penalized under Board Resolution No. 29, series of 2019; hence, shall be avoided.  <b>Face-to-Face Policies</b> 1. Wearing of mask and observance of social distancing shall be observed. 2. Use of cellphones, earphones, and other gadgets that are not necessary for the instruction is not allowed. 3. Cheating during examination is strictly prohibited; students caught doing such act shall be dealt with as provided in the Student Handbook.																						
<b>XVI. Grading System Per Board Resolution No.6 , s.2016</b>	<table><tr><td colspan="2">For Academic Courses</td><td colspan="2">Distribution of Weight for the Overall/Final Grade</td></tr><tr><td>Midterm/Final Examination</td><td>30%</td><td>Midterm Grade</td><td>50%</td></tr><tr><td>Quizzes/Homeworks/Seatworks/Problem Sets</td><td>30%</td><td>Tentative</td><td>50%</td></tr><tr><td>Performance(skills-based; psychomotor)</td><td><u>40%</u></td><td></td><td></td></tr><tr><td>Total</td><td>100%</td><td></td><td></td></tr></table>			For Academic Courses		Distribution of Weight for the Overall/Final Grade		Midterm/Final Examination	30%	Midterm Grade	50%	Quizzes/Homeworks/Seatworks/Problem Sets	30%	Tentative	50%	Performance(skills-based; psychomotor)	<u>40%</u>			Total	100%		
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Total	100%																						
<b>XVII. Consultation Time/Venue</b>	Wednesday 8:00-12:00am / 1:00-2:00pm // CICT Faculty Office																						



Prepared by:

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