Mississippi Valley State University
Mathematics, Computer & Information Sciences
Itta Bena, Mississippi 38941

Course Syllabus - Fall 2018

Course Number: CS 422
Course Title: Intro. to Networking
Instructor: Christopher I. G. Lanclos
Email: christopher.lanclos@mvsu.edu

Class Hours: MWF 2:00 – 2:50pm
Credit Hours: 3 Credit Hours
Coordinator: Christopher I. G. Lanclos
Website: bluebird.mvsu.edu

Office Hours:
Monday & Wednesday: 12:00PM – 2:00PM 3:30PM – 4:30PM
Tuesday & Thursday: 10:45PM – 11:45PM 2:30PM – 4:00PM
Wednesday (Tutoring Hours): 4:30PM – 5:30PM

Catalog Description:
This course covers issues of computer communications and networks. This course is organized around the TCP/IP reference model and Open Systems Interface model. The main topics include principles of data communication, local-area and wide-area networks, network design essentials, network media, network communication and protocols, network architectures, network operating systems and Internet-based applications.

Course Prerequisites: CS 371 - Operating Systems

Textbook(s) and other required materials:
J. Kurose & K. Ross, Computer Networking: A Top-Down Approach, 6th ed., Pearson Education, Upper Saddle River, New Jersey, 2013. ISBN-13: 978-0-13-285620-1

Anthony Sequeira, CompTIA Network+ N10-007 Cert Guide, 1st ed., Pearson IT Certification, ISBN-13: 978-0789759818, ISBN-10: 0789759810

Major Topics Covered in Course	45 Hours Total
Networking Introduction	5.5 hours
Networking Applications	5.5 hours
Reliable Data Delivery	6.5 hours
Routing and Forwarding	5.5 hours
Local Area Networks	5.5 hours
Resource Allocation	4.5 hours
Mobility	4.5 hours
*Assessments of Topics	7.5 hours

Certification: CCNA 200-125: Routing and Switching - Student Learning Outcomes:
By the time of graduation, students will be able to:

        1.0 Network Fundamentals
        2.0 LAN Switching Technologies

3.0 Routing Technologies
4.0 WAN Technologies
5.0 Infrastructure Services
6.0 Infrastructure Security
7.0 Infrastructure Management

Program Objective and Outcomes:
1. Graduates will be successful in computer science related fields.
    1.1. An ability to use current techniques, skills, and tools necessary for computing practice. (i)
    1.2. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices. (j)
    1.3. An ability to apply design and development principles in the construction of software systems of varying complexity. (k)
2. Graduates will apply knowledge in computer science and related fields to solve problems.
    2.1. An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline. (a)
    2.2. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. (b)
    2.3. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. (c)
3. Graduates may obtain advance degrees.
    3.1. An ability to function effectively on teams to accomplish a common goal. (d)
    3.2. An understanding of professional, ethical, legal, security and social issues and responsibilities. (e)
    3.3. An ability to communicate effectively with a range of audiences (f)
    3.4. An ability to analyze the local and global impact of computing on individuals, organizations, and society (g)
    3.5. Recognition of the need for and an ability to engage in continuing professional development. (h)

ABET - Student Learning Outcomes:
By the time of graduation, students will be able to:

Learning Outcomes
Core-Tier 1
Articulate the organization of the Internet. [Familiarity]
List and define the appropriate network terminology. [Familiarity]
Describe the layered structure of a typical networked architecture. [Familiarity]
Identify the different types of complexity in a network (edges, core, etc.). [Familiarity]
List the differences and the relations between names and addresses in a network. [Familiarity]
Define the principles behind naming schemes and resource location. [Familiarity]
Implement a simple client-server socket-based application. [Usage]

Core-Tier 2	
	Describe the operation of reliable delivery protocols. [Familiarity]
	List the factors that affect the performance of reliable delivery protocols. [Familiarity]
	Design and implement a simple reliable protocol. [Usage]
	Describe the organization of the network layer. [Familiarity]
	Describe how packets are forwarded in an IP network. [Familiarity]
	List the scalability benefits of hierarchical addressing. [Familiarity]
	Describe how frames are forwarded in an Ethernet network. [Familiarity]
	Describe the differences between IP and Ethernet. [Familiarity]
	Describe the interrelations between IP and Ethernet. [Familiarity]
	Describe the steps used in one common approach to the multiple access problem. [Familiarity]
	Describe how resources can be allocated in a network. [Familiarity]
	Describe the congestion problem in a large network. [Familiarity]
	Compare and contrast fixed and dynamic allocation techniques. [Assessment]
	Compare and contrast current approaches to congestion. [Assessment]
Elective	
	Describe the organization of a wireless network. [Familiarity]
	Describe how wireless networks support mobile users. [Familiarity]

Course Outcomes Mapped to Program Outcomes											
CS 422 Introduction to Networking											
Course Outcomes	P0 1.1	PO 1.2	PO 1.3	PO 2.1	PO 2.2	PO 2.3	PO 3.1	PO 3.2	PO 3.3	PO 3.4	PO 3.5
1											
2											
3											
4											
5											
6											
7											
8											
9											

Laboratory Projects:
1. Client-server socket programming
2. Wireshark network evaluation

Oral and Written Communication:
Students will have to write a paper written in the IEEE article format when submitting course project.

Social and Ethical Issues:
No Component

Attendance Policy:
Students are required to keep regular attendance to classes. Students are allowed to miss three (3) days of class. Days that have been approved by valid university excuse are not included in the three days. Any greater number of absences will result in the student failing the course.

Late/Missed Assignments:
Late assignments that are accompanied by a valid university excuse will be accepted with no late penalty. The late penalty is 10% of the grade for each class period, up to 3 period classes. After 3 days the assignment will not be accepted.

Students will be able to earn points back on quizzes, exams and in class work through attending office hours. The following are the points and time required for each. Quizzes = 30 minutes for 50% of missed points, exams = 2 hours for 50% of missed points, in class work = until assignment is done = 50% of missed points.

Grading Scale		Course Evaluation	
A	100-90	Attendance	5%
B	89-80	Quizzes	20%
C	79-70	Homework	20%
D	69-60	Exams	20%
F	59-Below	In Class Assign.	20%
		Paper	15%

Cheating, Plagiarism/Academic Integrity and Penalties:
Academic Integrity is the avoidance of gaining an unfair advantage in academic work, such as cheating, falsification of information, fraud, plagiarism, and unauthorized access to academic records or computer systems. The instructor ordinarily has final authority over the grades assigned to students and the authority to lower grades if cheating or plagiarism occurs. If a student violates the Academic Integrity Policy, the following steps will take place:
   1. Ordinarily, the instructor will take appropriate disciplinary action, which may include the awarding of "F" on the particular assignment or in the course.
   2. The instructor will make a report of the incident and of action taken, if any, to his/her department Chairperson, the Vice President for Student Affairs, and the student.
   3. The Judicial Board may review the incident and impose conduct discipline in accordance with the standard of conduct.

If a student is caught cheating, the first violation will be an "F" on that assignment. The second will follow the above process with an automatic "F" in the class.

Student with Special Needs:
The Mississippi Valley State University's ADA (Americans with Disabilities Act) Office offers students with disabilities (as defined by the ADA definition of a disability) accommodations according to provided documentation. Disability may include learning, psychiatric, physical disabilities, or chronic health disorder. A disability is a permanent condition which substantially limits one of more major life activities. Students having any special needs who require special instructional strategies should make these special needs known to the instructor during the first week of the course. The instructor will meet with the student to ensure access to resources in the University and make appropriate instructional modifications as required.

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Contact Information:
MVSU ADA Office
Technical Education Building
Kathy Brownlow, ADA Coordinator
Office# (662)254-3443
kbrownlow@mvsu.edu

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I reserve the right to make changes on this syllabus as needed. This document does not constitute a contract with the University. It contains guidelines.

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