MIDWESTERN STATE UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE
CMPS 4433: Computer Communications and Networks
Summer 2022

Instructor: Dr. Nelson L. Passos
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Office Hours: MTW 9:30 - 11:00 pm
Class Hours: MTWR 8:00 - BO 320 (F on July 8th)

Course Description:
Study of hardware and software used in data communication systems, including communication media, data link protocols, packet switching networks, local and wide area networks, the internet, electronic mail, high speed networks and integrated applications.

Textbook:
Data Communications and Networking, by B. A. Forouzan.

Grading:

Tests:	25 % (each)
Exam:	20 %
Assignments:	15 %
Project:	10 %
Class Participation:	5 %

Final grading letter:
90 to 100 pts = A, 80 to 89.99 pts = B, 70 to 79.99 pts = C, 60 to 69.99 pts = D, other = F

Additional and important information:

All students should refer to the current MSU Students Handbook and Activities Calendar for university policies related to class attendance, academic dishonesty, students responsibilities, rights and activities.

Disability needs: Inform the instructor if you are a student with a disability and need accommodations for this class.

Student drops: If you wish to drop this course you must first contact your instructor. All students-initiated drops must be processed by **July 21, 2022**.

Attendance: **Students are expected to attend all meetings of the classes in which they are enrolled.** In case of virtual classes, attendance will be verified by online participation. Attendance is rewarded by the participation points in the grading criteria.

Campus Carry: Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at https://mwsu.edu/campus-carry/rules-policies.

Cell phones, etc.: Use of any electronic device is not allowed in the classroom. Exceptions must be approved by the instructor.

Assignments: Assignments will be made as scheduled and are expected to be completed by the specified due date. Grades will be given to the assignments handed in on time. Late assignments will be accepted until one class past the due date, however will have their maximum grade reduced by twenty points. Any assignment turned in after that period or not done will be graded zero points. Students in this course must demonstrate their competency in fundamentals math skills through homework assignments and tests.
Assistance: Please contact your instructor for extra help during this course. This includes class material clarification, expected absences from class due to any personal problem, etc.

Academic Honesty: The Department of Computer Science had adopted the following policy related to cheating (academic misconduct). The policy will be applied to all instances of cheating on assignments and exams as determined by the instructor of the course.

- 1st instance of cheating in a course: The student will be assigned a non-replaceable grade of zero for the assignment, project or exam. In addition, the student will receive a one-letter grade reduction in course.
- 2nd instance of cheating in a course: The student will receive a grade of F in course & immediately be removed from course.

All instances of cheating will be reported to the Department Chair and, in the case of graduate students, to the Department Graduate Coordinator.

Testing Process
The Department of Computer Science has adopted the following policy related to testing:

- All bags, purses, electronics (turned off), books, etc. will be placed in the front of the room during exams, or in an area designated by the instructor.
- Unless otherwise announced by the instructor, nothing is allowed on the desk but pen/pencil/eraser and test papers.
- No student is allowed to leave the room during an exam and return

Midterm Progress Report: In order to help students keep track of their progress toward course objectives, the instructor for this class will provide a Midterm Progress Report through each student's WebWorld account. Midterm grades will not be reported on the students' transcript; nor will they be calculated in the cumulative GPA. They simply give students an idea of where they stand r. Students earning below a C at the midway point should schedule a meeting with their instructor.

RECORDING OF CLASS LECTURES: Permission must be requested in writing & obtained from the instructor before recording of class lectures. If permission is granted, the recording may only be used by the student making the recording. Recordings may NOT be posted on any internet source without written permission of the instructor. Failure to adhere to the policy may result in removal from the course with a grade of F or other appropriate punishment.

Grades will be posted on D2L

Tentative agenda:

July 5-	Introduction to networks - Protocols and Internet
	Network models - OSI - TCP/IP overview
July 6-	Process to Process Delivery
	TCP sliding window - SCTP
July 7-	Data and Signals- Phase, frequency, wavelength
	Frequency domain, bandwidth - Baseband
July 8-	Transmission issues - Data rate
	Data rate (noisy channels) - Performance
	Homework Assignment # 1
July 11-	Digital to digital conversion
	Block coding - Analog to digital conversion
July 12-	Delta modulation - Transmission modes
	Digital to analog conversion– constellation diagrams
	Homework Assignment # 2
July 13-	Analog to analog conversion - Multiplexing
	Frequency Division Multiplexing
July 14-	Spread spectrum
	Transmission media
July 18-	Wireless - Switching
	Datagram networks – Virtual circuit
July 19-	**Test # 1**
July 20-	Error detection - Block codes
	Cyclic codes - Checksum
	Homework Assignment # 3
July 21-	Data link control - framing - protocols
	Flow control – noisy channels - Go back N
July 25-	Selective repeat ARQ algorithm
	HDLC - Point to point protocol
July 26-	Multiple access - CSMA/CD - Controlled access
	Walsh tables
	Homework Assignment # 4
July 27-	Standard Ethernet
	Connecting devices – IPv4
	Homework Assignment # 5
July 28-	Network layer– IPv4
	Internet protocol – Ipv6
Aug 1-	Routing protocols
	Multicast - Switches
Aug 2-	**Test # 2**
Aug 3-	Telephone - Cable - Gbits Ethernet
Aug 4-	**Finals (Thursday, 8:00 am, room 320)**