Hardware & Networking Fundamentals

CMST 250

Lecture: MW 9:30
Lab: F 9:30 or U 2:30

3 credit hours

CATALOG DESCRIPTION:

An introduction to computer systems with an emphasis on the internal workings of computer and network hardware. Hardware topics include data representation in binary, digital logic and the Von-Neumann architecture. Network topics include local-area and wide-area networks, topology, protocols and transmission media. Student activities include proper hardware configurations for various applications.

What is this class all about?

Who's Von-Neumann ANYWAY? Does it matter?

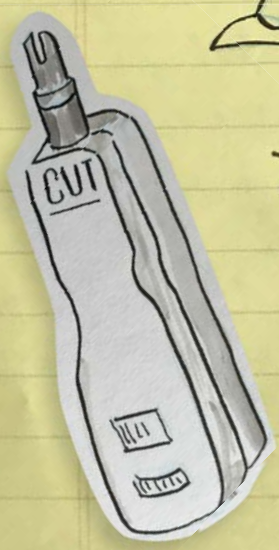IOT

Why Study Networks and computers?

Cat 5

OSI

IP (frequently)

CAT 5? where?

privacy

CUT

The Class is Relevant because we have ORGANIZED our entire Lives around our digital devices and the NETWORKS that connect them together.

IOT

security

RED or BLUE pill?

Everyone alive today should know about Computer Hardware and Computer Networks.

Contact Me:
billgx @ ksu.edu ← email + facetime
785 - 826 - 2646 ← school number
785 - 446 - 3571 ← home number
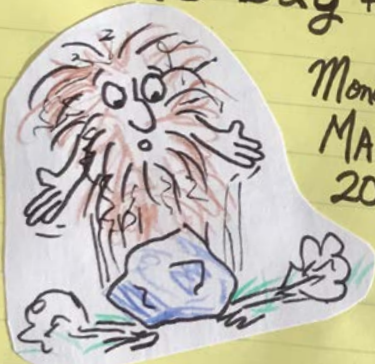@billgx ← twitter

El Professor

Come talk to me during

Office Hours

(This is professor's time available for students)

Last Day to Drop...
Monday MARCH 30th 2020

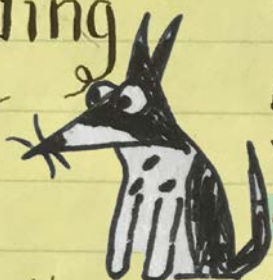| Gx's		Spring 2020		Schedule	
	M	T	W	U	F
9 30	250		250		250 Lab
10 30	office				250 Lab
11 30				office	
12 30					
1 30	office		office	185 SII	
2 30	office		office	250 Lab	
3 30	office		office	250 Lab	

No Textbook Required !!!

FINAL EXAM
Mark your calendars!

Thursday
MAY 14th
11:50 am

Grading Policy

Submit all work to Canvas by the due date. Late Work will be graded only at the discretion and convenience of the professor.

Habitual late work = zero credit!

Participation	— 15%	A	=	100-90 %
Labs	— 30%	B	=	89 - 80 %
Exams + quizzes	— 25%	C	=	79 - 70 %
Research Project	— 15%	D	=	69 - 60 %
FINAL Exam	— 15%	F	=	< 60 %

INCOMPLETES – On rare occasions, life gets away and circumstances prevent an otherwise successful student from finishing the course. (Past examples include automobile accidents, death of a loved one or other emergency situation.) Students finding themselves in a predicament like this, after discussing it with the professor, will receive the grade currently on record. An agreement will be made, in writing, as to the work that needs to be completed along with a promised completion date – no later than the last day of class on the subsequent semester. When this agreement is met and the work completed the semester grade will be changed accordingly.

Special Requests ✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳

All requests requiring special consideration must be made in person during office hours. Electronic Messages and their ilk will not be accepted! Examples: excusing absences, changing assignment requirements, special exams or anything out of the ordinary not being offered to all students.
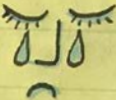
Attendance Policy:

you must attend class to be successful in this course. Attendance is required and will be taken at the beginning of class.
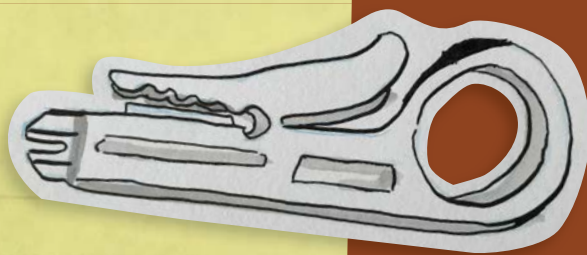
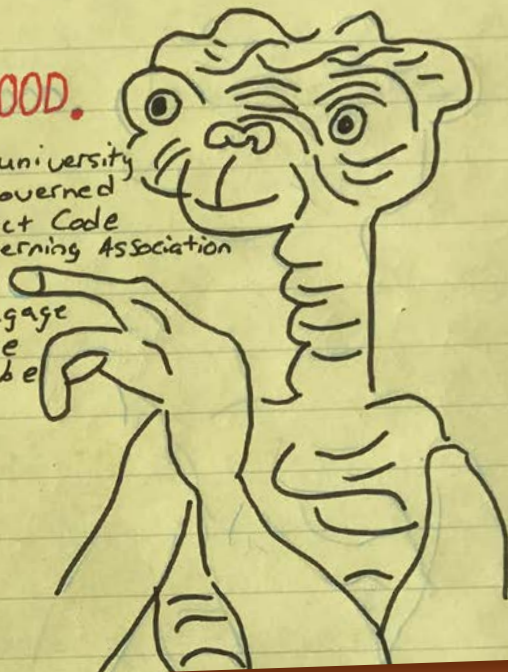**1** or **2** absences are **OK** because Stuff Happens.

3 absences = DANGER ZONE

4 absences = (**F** - WORD) The other fail 😢
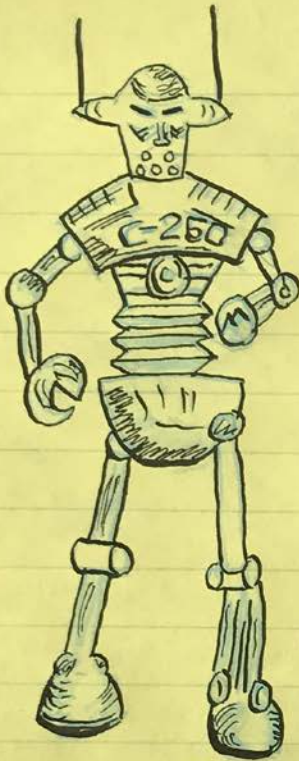
To excuse an Absence, see the professor during **Office Hours** (bring evidence)

CLASSROOM CONDUCT   BE GOOD.

All student activities in the university including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

ACADEMIC HONESTY

Kansas State University has an Honor System based on **PERSONAL INTEGRITY**, which is presumed to be sufficient assurance that, in academic matters, one's work is performed **HONESTLY** and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: **www.k-state.edu/honor**. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated:

"On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."

A grade of **XF** can result from a breach of academic honesty. The **F** indicates failure in the course. The **X** indicates the reason is an Honor Pledge violation.

ACADEMIC ACCOMMODATIONS

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through Manhattan or Olathe campuses contact Student Access Center accesscenter@k-state.edu 785-532-6441; for K-State Polytechnic Campus, contact Sarah Werner, Dir. of Student Life, at sarahdwerner@ksu.edu or call 785-826-2984.

Hardware & Networking
Cmst 250

Topics
computer anatomy
basic electricity
network topologies
OSI MODEL
network HARDWARE
the BINARY number system
Subnetting
InterNet Communication

Quiz Each Week

Memo No. _____
Date ___ / ___ / ___

Week 1
Computer Components, peripherals & Architecture — History & Research

Networks Basics

Week 2
Cabling Electricity
Net Topology

Week 6
Binary Hex
Subnets

OSI MODEL Week 3
Network Hardware

Week 7
subnets

Switching MIDTERM EXAM week
vs LAN 4
Routing vs WAN
CSU/DSU

Week 8
Research Presentation
& FINAL

TCP/IP Network week
MODEL Simulation 5
Protocols BIG SISTER

After completing this course, the student should be able to do the following:

1. Understand key concepts of networking including:
   - Identify the seven layers of the OSI Model and their functions [A.4]
   - Describe the main characteristics and functions of the most commonly used protocol suites. [A.4]
   - Identify the purpose, features, and functions of the following network components: hubs, switches, bridges, routers, gateways, WAN equipment, network cards, and wireless access points [A.1]
2. Acquire some of the skills required to analyze & utilize information pertaining to networking:
   - Given a troubleshooting scenario, decide on the appropriate TCP/IP utility to use to analyze the problem [A.1, A.4, A.5, B.2]
   - Install and administer internet server software, an internet client, and demonstrate a basic understanding of popular client/server systems [A.1, A.4, A.5, A.6, B.2, B.3]
3. Communicate technical information to a variety of audiences
   - Write technical reports documenting laboratory activities [C.1]
   - Research and publish a term paper about a networking-related topic using digital video on the Internet [C.1, C.2]