**ISDS 4120**

**Exam 2**

Exam 2 will be a closed note, closed book, closed Internet Moodle based exam. The exam will consist of multiple choice, matching, short answer, and scenarios and you will have 50 minutes to complete the exam.

The content will cover lectures 6 to 9 and chapters 4 to 10 of the Fitzgerald book. What follows is a list of the concepts and models on the exam. It is not enough to simply memorize the definitions or concepts – the key will be your ability to take the concepts and models and apply them to information presented to you.

If you cannot locate a concept, reach out to your colleagues for assistance – I highly recommend forming study groups to assist you.

**Concept Questions**

* What does an application layer address using TCP look like?
* The functions of the application layer
* The division of software on clients versus servers for three tier and two-tier architecture
* Where server name resolution is done
* What does TCP use to reassemble packets in the correct order?
* The attributes of a sound wave
* What routing means; the three fundamental approaches to routing; and different types of dynamic routing
* What does the transport layer do to the messages?
* How the capacity of a circuit is determined
* The different types of data
* The factors to consider when selecting media to be used in a network
* How contention and collision work and which is better for different types of networks
* What polling means from a networking perspective
* How an application layer address is translated to an IP address
* The difference between the logical and physical design of a circuit
* The definition of a bottleneck
* How a star, ring, and mesh network work
* The difference between a hub, router, and switch
* Different types of backbone networks and their logical and physical topologies
* Different backbone network options for a firm, the topologies of each, and the benefits and drawbacks
* Different approaches to monitor connections on a network
* The definition and purpose of network segmentation
* The activities associated with each of the stages of network design
* The definition and types of media access control
* The different layers of the backbone architecture
* The advantage of a VPN versus a private WAN connection
* Options to improve backbone performance
* The definition of visioning
* Options to monitor and control a network
* Be able to state the five layers of the OSI model in order
* Be able to identify the functionality of each of the layers
* Be able to match the protocols to the layers of the OSI model
* The three choices when outsourcing to the cloud and be able to match them to the grid
* The six components of a LAN and the two broad choices that are available when designing the LAN

**Applications**

* Best practices for architecture and technology for LAN design
* Should companies build to network capacity? Why or why not?
* The advantage of layers, from an OSI model perspective (be able to identify 3)