



**ACIT 2620**

# **Principles of Enterprise Networking**

By: Yves Rene Shema

# Objectives:

- Recap of OSI Model
- Survey of networking devices
- Overview of common network topologies
- Project setup

# OSI Model Recap

- (7) **Application:** domain specific messages
- (6) **Presentation:** data formatting (e.g. encryption, compression, character encoding)
- (5) **Session:** organizing of messages into "visits"
- (4) **Transport:** multiplexing, segmentation, re-assembly
- (3) **Network:** routing datagrams between networks, global addressing
- (2) **Data-Link:** communication on shared medium
- (1) **Physical:** signals across medium (bits)

## Broadcast Domain vs Collision Domain

A broadcast domain is a group of nodes sharing the same transmission medium (i.e. LAN or simply network). When these nodes are not connected through a switch (or bridge), the network constitutes a single collision domain.

# Network Devices

Define the function and uppermost OSI layer implemented by the following devices:

- Network Interface Controller/Card
- Hub
- Bridge
- Switch

- Router
- NAT Router
- Wireless Access Point (WAP)
- Firewall



# Network Topologies

- Bus
- Ring
- Star
- Mesh
- Hybrid

# Reading List

Read this before next class:

- [Ethernet Fundamentals](#)
- [Ethernet Basics](#)
- Optional:
  - [VIM basics](#) (or just type `vimtutor` in a linux terminal and follow along)
  - [A tcpdump Tutorial with Examples](#)