University of Colorado **Boulder**

Fundamentals of Data Communications

Final Review

Levi Perigo, Ph.D.
University of Colorado Boulder
Department of Computer Science
Network Engineering

- **Internships**
  - Interviews

- **Final Schedule**

Final Exam Format

- **Online – in class (bring laptop)**
  - Spread out

- **~45 Questions**

- **75 Minutes**

- **10 - Multiple Choice (1 point)**
- **30 - Single Answer (3 points)**
- **5 - Long/Multiple Answer (5 points)**
  - Short and to the point
    - *Does not need to be in sentence format*
    - *If question asks for "two answers" provide 2 and only 2*
- **2 - Essay (10 points)**

Material

- **Assignments**

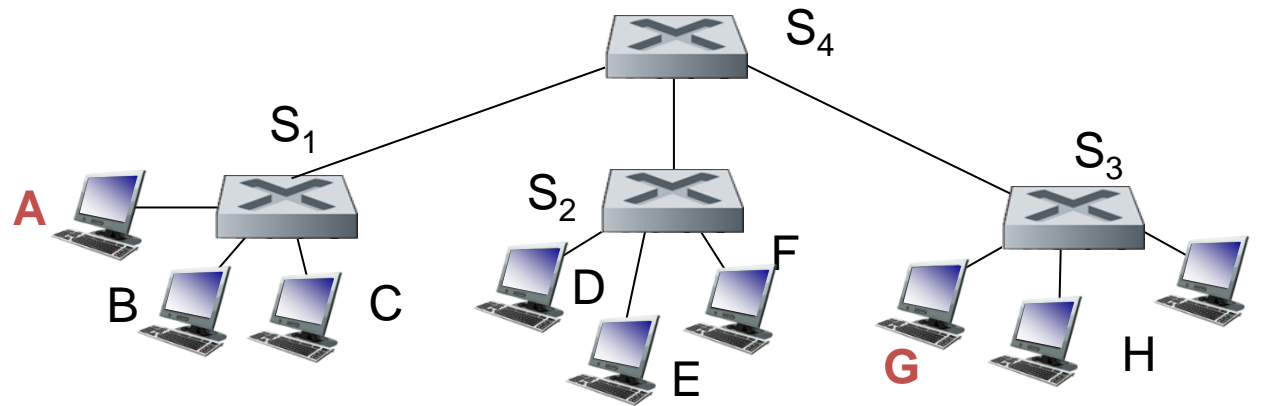- **Quizzes**

- **Readings**

- **Labs**

Topics

- **OSI Model**

- **OS shell/terminal**

- **Network Topologies and Media**

- **Switching**
  - STP
  - VLANs

  - Trunking

- **IPv4 Addressing**
  - Public vs. Private
  - Subnetting

- **IPv6**

- **Routing**

Topics

- **Protocol Analyzers (Wireshark)**

- **Applications: DHCP, HTTP, DNS, etc.**

- **TCP**

- **Wireless**

- **Linux**

- **Security**

- **IOT**

- **Cloud & Data Center**

- **Troubleshooting Framework**

University of Colorado
Boulder

Interconnecting Switches

Routing Between VLANs with 802.1Q Trunks

fa0/0
802.1Q

```
interface FastEthernet0/0
!


interface FastEthernet0/0.1
!


interface FastEthernet0/0.2
```

VLAN 1

VLAN 2

10.1.1.2

10.2.2.2