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| **ELEMENT** | **CONTENT** |
| DEPARTMENT | CIS |
| AUTHOR (S) | Jean F. Hakim |
| COURSE NUMBER | **CIS 3210** |
| COURSE TITLE | **Network Routing & Switching Concepts** |
| SHORT TITLE | Routing & Switching |
| COURSE LEVEL | 3000 |
| DATE CREATED | 1/3/2013 |
| CHECKED/CHANGED | 3/1/2017 |
| PREREQUISITES | CIS 2151 |
| COREQUISITES |  |
| RESTRICTIONS |  |
| SPECIAL FEES | No |
| CREDITS | 4 |
| HOURS | 3 hours of lecture, 2 hours of lab per week |
| SEMESTER | Fall |
| COURSE DESCRIPTION | This course teaches the student the operation of routers and switches in a network architecture. The student learns how to configure routers and switches. Concepts such as virtual LAN (VLAN) configurations; routing concepts; inter-VLAN routing; static routing; introduction to OSPF; access control lists and implementation; and configuration of DHCP and NAT in a network configuration are covered along with IPv4 and IPv6 concepts. |
| SUGGESTED TEXTS | *Routing and Switching Essentials* |
| OPTIONAL TEXTS | *CCNA Routing and Switching Portable Command Guide* |
| COURSE OUTCOMES | The successful student will be able to:   1. Perform router and switch configuration and operation 2. Demonstrate hands-on experience with routing concepts 3. Understand and implement VLAN configurations 4. Understand the routing table 5. Implement DHCP and NAT for IPV4 and IPv6 in a network configuration |
| COURSE CONTENT | 1. Routing and packet forwarding 2. Switched networks 3. Switch configuration 4. VLANs 5. Routing concepts 6. Inter-VLAN routing 7. Static routing 8. Dynamic routing 9. Single-area OSPF 10. ACLs 11. DHCP 12. NAT |
| LAB/STUDIO OUTCOMES | The successful student will be able to:   1. Demonstrate hands-on experience with Cisco equipment 2. Set up configurations 3. Demonstrate collaboration and coordination in setting up network architectures |
| LAB/STUDIO CONTENT | 1. Network design 2. Routing and switch configuration 3. VLANs and trunking 4. Per-interface VLAN routing 5. RIPv2 6. OSPF 7. ACLs 8. DHCP 9. NAT 10. Skills integration |
| LECTURE CAPACITY | 32 |
| LAB CAPACITY | 16 |
| GRADED OR P/NP | Graded |
| EVALUATION | Attendance, lab work, exams, written assignments, packet tracer assignments |
| DELIVERY METHOD | HYB, LAB |
| ROOM REQUIREMENTS | CIS lab for lab |
| AUTHOR’S NOTES |  |