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| **ELEMENT** | **CONTENT** |
| DEPARTMENT | CIS |
| AUTHOR (S) | Jean F. Hakim |
| COURSE NUMBER | **CIS 5080** |
| COURSE TITLE | **Advanced Network Security** |
| SHORT TITLE | Adv Network Sec |
| COURSE LEVEL | 5000 |
| DATE CREATED | 4/10/2017 |
| CHECKED/CHANGED | 6/8/2017 |
| PREREQUISITES | CIS 2151 |
| COREQUISITES |  |
| RESTRICTIONS | Graduate standing |
| SPECIAL FEES | No |
| CREDITS | 3 |
| HOURS | 3 hours of lecture per week |
| SEMESTER | Fall |
| COURSE DESCRIPTION | This course teaches the student how to implement, monitor, deploy, and maintain a secure network. The student learns how to implement on Cisco routers (AAA, IP-sec, secure Layer 2 technologies); implement firewall technologies; IDS and IPS fundamentals; and mitigation technologies for email, web-based, and endpoint threats. Comprehensive assignments using the Cisco Packet Tracer network simulator emphasize hands-on learning. |
| SUGGESTED TEXTS | *CCNA Security* |
| OPTIONAL TEXTS | *CCNA Routing and Switching Portable Command Guide* |
| COURSE OUTCOMES | The successful student will be able to:   1. Describe security threats facing modern network infrastructures 2. Secure network device access 3. Implement AAA on network devices 4. Mitigate threats to networks using ACLs Implement secure network management and reporting 5. Mitigate common Layer 2 attacks 6. Implement the Cisco IOS firewall feature set 7. Implement an adaptive security appliance (ASA) 8. Implement the Cisco IOS Intrusion Prevention System (IPS) feature set 9. Implement site-to-site IP Sec VPNs 10. Administer effective security policies |
| COURSE CONTENT | 1. Network threats 2. Mitigation techniques 3. Introduction to securing a network 4. Secure administration on routers 5. Secure administration with AAA 6. Implement firewall technologies to secure the network perimeter 7. Configuring IPS to mitigate attacks on the network 8. LAN security considerations and implementation of Layer 2 security features 9. Methods for protecting data confidentiality and integrity 10. Implement secure virtual private networks 11. Create and implement a comprehensive security policy to meet the security needs of an enterprise 12. Implement firewall technologies using the ASA to secure the network perimeter |
| LAB/STUDIO OUTCOMES |  |
| LAB/STUDIO CONTENT |  |
| LECTURE CAPACITY | 32 |
| LAB CAPACITY |  |
| GRADED OR P/NP | Graded |
| EVALUATION | Attendance, exams, written assignments, packet tracer assignments |
| DELIVERY METHOD | HYB |
| ROOM REQUIREMENTS |  |
| AUTHOR’S NOTES | Undergraduate-level cross-listed course is CIS 4080. |