

# Minnesota State College Southeast

## NWAT 2681: Fundamentals of Security

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

As organizations accelerate their interest in network business solutions, they need qualified professionals who possess the skills necessary to ensure the security of all network-based transactions. This course will provide training to improve the student's skills and knowledge in three key areas of network security: firewalls, intrusion detection systems, and virtual private networks. Practical hands-on projects will guide the student through implementing hardware, software, network, Internet and data security configurations. (Prerequisite or concurrent: NWAT1641) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 01/05/2005 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

**D. LEARNING OUTCOMES (General)**

1. Describe an information security policy
2. Describe the various authentication certificates
3. List key authentication methods
4. Explain auditing information security schemes
5. Explain biometrics
6. Configure access control to networked computers
7. Analyze security logs
8. Identify operating system vulnerabilities
9. Describe mandatory access control
10. Identify WWW vulnerabilities
11. Describe email vulnerabilities
12. Describe SSL
13. Describe HTTPS
14. Identify basic security attacks
15. Explain social engineering
16. Explain mathematical attacks
17. Identify man-in-the-middle attacks
18. Explain TCP/IP Hijacking
19. Identify denial of service attacks
20. Describe malware
21. Explain a token authentication method
22. Explain CHAP
23. Explain Kerberos
24. Configure mutual authentication
25. Explain operating system hardening
26. Explain application hardening
27. Describe network hardening
28. Explain NAT
29. Explain VLAN
30. Describe a honeypot
31. Describe security zones
32. Explain tunneling protocols
33. Explain WAP
34. Display professionalism
35. Display teamwork attitude
36. Display interpersonal communication
37. Explain WLAN
38. Explain IEEE 802.11
39. Explain WLAN security
40. Explain enterprise WLAN security
41. Explain remote access security
42. Explain cryptography
43. Define cryptography hashing algorithms
44. Define DES

45. Define symmetric encryption
46. Describe asymmetric encryption
47. Identify various uses of cryptography
48. Display troubleshooting techniques
49. Display safe work habits
50. Explain using and managing keys
51. Identify PKI
52. Identify security recovery
53. Describe computer forensics
54. Describe risk assessment
55. Explain risk management
56. Identify key elements in an ethics policy
57. Explain an ethics policy

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted