

**CURRICULUM AND CREDIT FRAMEWORK FOR
UNDERGRADUATE PROGRAMME**

Syllabus for

**Department of Computer Science
Nagaland University
SKILL ENHANCEMENT COURSES**

2023

SKILLENHANCEMENTCOURSES(3CreditsEach)

Semester	CourseCode	Titleof thePaper	Department	Remark
III	CSSEC-03	Information Security	Computer Science	
IV	CSSEC-04	System Administration and Maintenance	Computer Science	

Skill Enhancement Courses

Paper Code CSSEC-03: Information Security

(Credits- 3)

Semester: III

Course Objective

The course aims to introduce the cyber threats, issues in information security and contemporary cyber laws.

Course Learning Outcomes

On successful completion of this course, a student will be able to:

- enumerate issues in computer security.
- enumerate and describe common forms of attacks.
- describe the importance of security policy in the security framework.
- describe security related terms like cryptography, privacy, steganography.

Unit 1

Introduction: Key principles of conventional computer security, codes, ciphers, substitution cipher (Caesar), transposition cipher, public and private key cryptography.

Risk analysis, security policies, data protection, access control, internal vs external threat, security assurance, passwords, computer forensics and incident response.

Unit 2

Cyber Attacks and Digital Crime: DoS attack, man-in-the-middle attack, phishing attack, spoofing attack, spam attack, drive-by attack, password attack, SQL injection attack, cross-site scripting attack, eavesdropping attack, malware attack, social engineering attack, session hijacking attack.

Unit 3

Safety Tools and Issues: Firewalls, logging and intrusion detection systems, e-mail security, digital signature, electronic signature, digital certificate, security issues in operating systems, ethics of hacking and cracking.

References

1. Merkow, M. S., & Breithaupt, J. (2014). Information Security Principles and Practices (5th Edition). Pearson Education.
2. Snyder, G.R.F., & Pardoe, T. (2010). Network Security. Cengage Learning.
3. Whitman, M., & Mattod, H. J. (2015). Principles of Information Security (5th Edition). Cengage Learning.
4. Cyber Laws: Intellectual property & E Commerce, Security- Kumar K, dominant Publisher

Skill Enhancement Course

Paper Code CSSEC-04: System Administration and Maintenance

(Credits- 3)

Semester: IV

Course Objective

The course focuses on administration of operating systems (windows, Linux/Unix), installation and maintenance. The students will also learn the difference between desktop based and server-based operating system.

Course Learning Outcomes

On successful completion of the course, a student will be able to:

- distinguish between features of Linux/Unix and windows operating system.
- install/uninstall hardware and software.
- configure system environment.
- examine system performance issues.
- examine file structure and properties.

Unit 1

Introduction to Operating system: Basics of operating system, services, features and functions of different operating systems, Kernel, API, CLI, GUI, devices and device drivers, IPv4, IPv6. Introduction to server based operating systems, difference between desktop based (Windows 7/10) and server based operating systems like Windows server 2003/2008.

Unit 2

Linux/Ubuntu System Environment: Configuring desktop environment and desktop settings, installing and configuring software and hardware, exploring file structure, terminal, shell, basic Unix Commands like cat, ls, cd, date, cal, man, echo, pwd, mkdir, rm, rmdirps, kill etc.

Unit 3

Windows System Environment: Configuring desktop environment and desktop settings, installing and configuring software and hardware, explore system configuration using control panel, creating users, add/ delete users, difference between workgroup and domain, concept of user profiles – creating and roaming, concept of Active Directory, process and disk management, Windows task manager, exploring file structure and file properties, backup and recovery.

References

1. Panek, W., & Wentworth, T. (2010). *Mastering Windows 7 administration*. Wiley Publishing Inc.
2. Snyder, G., Hein, T. R., & EviNemeth, B. W. (2018). *UNIX and Linux System Administration Handbook* (Fifth edition). Pearson.
3. Sobell, M.S. (2014). *A Practical Guide to Ubuntu Linux* (Fourth edition). Prentice Hall.

Additional Resources

1. Burges, M. (2003). *Principles of Network and System Administration*. John Wiley & sons Ltd.
2. Limoncelli, T.A., Hogan, C., & Chalup, S. R. (2007). *The Practice of System and Network Administration*. Addison-Wesley.