



ଓଡ଼ିଶା ରାଜ୍ୟ ମୁକ୍ତ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ସମ୍ବଲପୁର, ଓଡ଼ିଶା
Odisha State Open University, Sambalpur, Odisha
Established by an Act of Government of Odisha.

SYLLABUS OF DIPLOMA IN CYBER SECURITY (DCS)

For Academic Session 2017-18

Duration: 1 Year

Total Credit: 32

Semester - I		
Course Code	Course Title	Credit
CSP – 010	Operating System Basics	6
CSP – 011	Data Communication & Networking	6
CSP – 012	Information Security	6
Semester - II		
CSP – 013	Application Cyber Security	6
CSP – 014	Network Cyber Security	6
CSP – 015	Minor Project	2

1st Semester

CSP-010 : OPERATING SYSTEM BASICS	
Block-1	Windows
Unit-1	Introduction, Types Of Operating System, My Computer, Recycle Bin, Desktop, Drives; Creating, Renaming a directory/folder, Make a file read only, hidden, Editing a file; Delete a file.
Unit-2	Listing the files in the directory, Create a file, Copy a file from one directory to the other, Deleting all files from a directory/folder, Deleting a director/folder, Formatting a hard disk and loading operating system, Domain, workgroup, Active Directory, User Management, Network Setting, Services, IIS Configuration
Block -2	Linux
Unit -1	Introduction, History of Linux, Distributions of Linux, Devices and drivers, File system hierarchy, The components: Kernel, Distribution, XFree86, Sawfish, Gnome, The command line commands, File, management commands, Working with nano, Working with help (man).
Unit -2	SSH and X-forwarding, Managing compressed archives with zip and tar, Working with GNU screen, How to add users and groups, working with su, working with sudo, Changing user password, Printing, Installing software with Yum, Yast, Rpm, Installing webmin.
CSP-011 : DATA COMMUNICATION & NETWORKING	
Block-1	Introduction to Data communication and Networking
Unit-1	Fundamentals of data communication and networking
Unit-2	Network Reference Models: OSI and TCP/IP Models
Unit-3	Transmission media and network devices
Block -2	Physical and data link layer functionalities
Unit -1	Analog and Digital Signals
Unit -2	Encoding
Unit -3	Multiplexing and Switching: FDM,TDM,WDM,SDM, Message Switching and Circuit Switching and Packet Switching
Unit -4	Data Link Control Protocols: Token Passing, CSMA/CD,CSMA,CSMA/CA
Block -3	Internet Protocols and Services
Unit-1	Network Layer : Internetworking, and IP addressing, ARP, RARP,ICMP,IGMP
Unit-2	Transport Layer protocols: TCP& UDP
Unit-3	Application Layer protocols: HTTP, HTTPs, SMTP, POP, DNS, TELNET, FTP
Unit-4	Internet and its Services: Intranet, Extranet, www, Email
CSP-012 : INFORMATION SECURITY	
Block-1	Information Security Concepts and Cryptography
Unit-1	Information Security Concepts: Information security issues, goals, architecture, attacks, Security Services and Mechanisms.
Unit-2	Introduction to Cryptography: Network security model, Cryptographic systems, Cryptanalysis, Steganography.Types of Cryptography: Symmetric key and Asymmetric Key Cryptography, Encryption and Decryption Techniques.
Unit-3	Cryptographic Algorithms: Cryptographic hash, Message Digest, Data Encryption Standard, Advanced Encryption Standard, RSA(Introductory concepts only)
Block-2	Security Threats and Vulnerabilities
Unit-1	Overview of Security threats and Vulnerability: Types of attacks on onfidentiality,

	Integrity and Availability. Vulnerability and Threats.
Unit-2	Malware: Viruses, Worms, Trojan horses
Unit-3	Security Counter Measures; Intrusion Detection, Antivirus Software
Block-3	Ethical Issues in Information Security & Privacy
Unit-1	Information Security, Privacy and Ethics
Unit-2	Cyber Crime and Cyber Terrorism
Unit-3	Hacking: Ethical issues, Ethical Hacking

2nd Semester

CSP-013 : APPLICATION CYBER SECURITY	
Block-1	System Security
Unit-1	Desktop Security
Unit-2	Programming Bugs and Malicious code
Unit-3	Database Security
Unit-4	Operating System Security: Designing Secure Operating Systems, OS Security Vulnerabilities.
Block -2	Security Management
Unit -1	Disaster recovery
Unit -2	Digital Signature
Unit -3	Ethical Hacking, Penetration Testing
Unit -4	Computer Forensics
Block -3	Cyber Laws and Standards
Unit-1	ISO 27001, Cyber Law (Information Technology Act, 2000)
Unit-2	International Standards maintained for Cyber Security
Unit-3	Security Audit ,Investigation by Investing Agency
Unit-4	Cyber Security Solutions
CSP-014 : NETWORK CYBER SECURITY	
Block-1	Network Security
Unit-1	Network Security Model, Network Security Threats
Unit-2	Firewalls: Overview, Types, Features, User Management
Unit-3	Intrusion Detection System , Intrusion Prevention System
Unit-4	Public Key Infrastructure, Digital Signature Schemes
Block-2	Internet and Web Application Security
Unit-1	Email security: PGP and SMIME
Unit-2	Web Security: Web authentication, Injection Flaws, SQL Injection
Unit-3	Web Browser Security
Unit-4	E-Commerce Security
Block-3	Wireless Network Security
Unit-1	Wireless Network Components
Unit-2	Security issues in wireless Networks
Unit-3	Securing a wireless network
Unit-4	Mobile security
CSP-015 : Minor Project	
Report (75 Marks)	Presentation & Viva (25 Marks)