

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/5
Branch	Computer Science & Engineering			Semester	VI
Course Code		Course Name	Network and Cyber Security		
Course Outcome- 1	Identify Information system security issues and attacks.			Teach Hrs	Marks
Learning Outcome 1	Explain fundamental concepts of information system			8	10
Contents	Introduction to information system, PAIN: privacy, authentication, integrity, Non-repudiation, issues in information security, goals of information system, architecture of information system, privacy policy of information system.				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Learning Outcome 2	Illustrate the concept and issues of hacking			8	10
Contents	Introduction to hacking, types of hacking: phishing, cookie theft, Dos, DNS Spoofing, types of hackers: black ,grey, white hackers, ethical hacking, penetration testing, issues in ethical hacking				
Method of Assessment	Internal pen paper test				
Learning Outcome 3	Explain the DoS (Denial of Service Attack)			8	10
Contents	Denial of service attacks, Flooding attack, distributed denial of service attacks, application based bandwidth attack, defense against DoS, responding to DoS				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Course outcome 2	Describe cryptography, encryption and decryption techniques			Teach Hrs	Marks
Learning Outcome 4	Determine the common type of cryptographic ciphers			10	10

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Course Code		Course Name	Network and Cyber Security		
Contents	Basic elementary cryptography, Steganography, characteristics of modern cryptography, cryptography techniques : encryption decryption, hash function, MaC, introduction to ciphers, types of ciphers : substitution cipher ,transposition ciphers , block ciphers (AES and DES) techniques				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Learning Outcome 5	Compare symmetric and asymmetric encryption systems			9	10
Contents	Components of cryptosystem,Types of cryptosystem: symmetric and Asymmetric key encryption, challenges of symmetric and asymmetric cryptosystem,Key management in cryptography: public and private key cryptosystem, challenges of public key system.Attacks of cryptosystem: passive attack ,active attack				
Method of Assessment	Internal: Pen paper test				
Learning Outcome 6	Apply authentication techniques			7	10
Contents	Introduction to authentication, need of authentication Authentication techniques:- message authentication, digital signature Encryption Algorithm: RSA Algorithm.				
Method of Assessment	External: Laboratory observation and viva voce.				
Course outcome 3	Determine data protection Techniques from intrusion and other threats				
Learning Outcome 7	Examine security policies of Operating System			6	10
Contents	Introduction to Intrusion detection system , Intrusion prevention system, Security policies of operating system.				
Method of Assessment	External: Laboratory observation and viva voce.				

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Branch	Computer Science & Engineering			Semester	VI
Course Code		Course Name	Network and Cyber Security		
Learning Outcome 8	Distinguish between different types of security threats			8	10
Contents	Introduction of malware, types of malware: Viruses, Trojan horse, malicious codes , logic bombs, ransom wares, zombies Security threats to system : hacking ,cracking, sneaking				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Learning Outcome 9	Explain firewall securities of windows			10	10
Contents	Introduction to firewalls, Types of Firewalls, Need of firewalls, Function of firewalls, enabling and disabling firewalls, User Management in firewall , VPN Security Basic functions of Antivirus, advantages and disadvantages of antivirus, Differentiate between Firewalls and Antivirus, some examples of ant viruses.				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Course outcome 4	Analyze the Regulatory framework for ensuring a Secure Cyberspace				
Learning Outcome 10	Classify particulars of cyber Security			7	10
Contents	Introduction to cyber space, cyber-attacks and its types, cyber-crime, cyber terrorism, the state and Private Sector in Cyberspace. Difference between cyber security and information security				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Learning Outcome 11	List steps to ensure security of web browser			8	10
Contents	E-mail security services, concept of web services, characteristics of web services, architecture of web services, components of web services, implementation of web browser security, web security standards.				
Method of Assessment	Internal : Laboratory observation / Lab File				

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Course Code		Course Name	Network and Cyber Security		
Learning Outcome 12	Elaborate features of any mobile security app			7	10
Contents	Wireless security basics: concepts, access points, network, standards, wi-fi authentication modes, Wireless threats and its types, Security challenges in mobile device and cloud security				
Method of Assessment	Internal : Laboratory observation				
Learning Outcome 13	Demonstrate security vulnerabilities of e-commerce			8	10
Contents	Essentials of e-commerce security, steps to ensure security, electronic payment system, types of electronic payment system, security in electronic payment system.				
Method of Assessment	External: Laboratory observation and viva voce.				
Course Outcome - 5	Summarize security standards and cyber laws			Teach Hrs	Marks
Learning Outcome 14	Discuss the Cyber security standards and its basic laws			8	10
Contents	Cyber Law overview and its objectives, Introduction to Cyber Security Regulations and strategies, Roles of International Law, Basics of ISO27001, Introduction to Indian IT Act 2000, IPR laws, offenses and penalties.				
Method of Assessment	External: End semester theory examination (Pen paper test).				
Learning Outcome 15	Interpret Legal information security governance and regulatory issues.			8	10
Contents	Security audit procedures, Developing security policies, disaster recovery, legal privacy information and the law				
Method of Assessment	Internal: Short Answer Type Test/Quiz/Pen Paper Test				

REFERENCE BOOKS:

S No	Title & Publication	Author
1	Cryptography and Network Security (principles and approaches)	William Stallings Pearson Education
2	Principles of Information Security	Whitman, Thomson.
3	Network Security Essentials (Applications and Standards)	William Stallings Pearson Education
4	https://en.wikipedia.org/wiki/Information_Technology_Act,_2000	
5	https://en.wikipedia.org/wiki/IT_law	
6	E-books/E-tools/Relevant software to be used as recommended by AICTE/NITTTR/RGPV	

Suggested List of Experiments:

1. Write a program to implement concept of authentication. (Collect a password from user and test for user validity).
2. Write a program to implement the concept of RSA algorithm.
3. Install intrusion detection software and monitor behavior of other software.
4. Install and configure windows firewall
5. Install and configure security protocols on windows.
6. Configure browser security with different extensions.
7. Install and configure SMTP sever.
8. Install and configure antivirus software for security.
9. Configure wireless network and its security protocol.
10. Study and implementation of e-commerce security protocols and software.
11. Setup secure network in laboratory.