

With effect from the Academic Year 2019-20

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Computer Science & Engineering
CYBER SECURITY (OPEN ELECTIVE-I)

SYLLABUS FOR B.E. III-SEMESTER
(Common for CIVIL, ECE, EEE & MECH)

L:T:P (Hrs./week): 2:0:0	SEE Marks : 60	Course Code : U180E320CS
Credits : 2	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES <i>On completion of the course, students will be able to</i>
1 cyber security to safeguard from threats and infection spread through the internet	1 Utilize the concepts of Explain the concepts of confidentiality, availability and integrity
	2 Explain the basics of fraud techniques used by a hacker
	3 Explore the common exploitation mechanisms and inspect data sniffing over the network
	4 Determine the ways an organization attempts to discover threats.

UNIT-I:

CYBER SECURITY FUNDAMENTALS: Network and Security concepts: Information assurance fundamentals, Basic Cryptography, Symmetric Encryption, Public key encryption, Digital Signature, Key Exchange Protocols, DNS, Firewalls, Virtualization.

UNIT-II:

ATTACKER TECHNIQUES AND MOTIVATIONS: How hackers cover their tracks, Tunneling techniques, Fraud Techniques: Phishing, Smishing, Vishing and Mobile Malicious Code, Rogue Antivirus, Click Fraud, Threat Infrastructure: Botnets, Fast-Flux, Advanced Fast-Flux.



UNIT-III:

EXPLOITATION: Techniques to gain foothold: Shellcode, Integer overflow, Stack based buffer overflow, Format String Vulnerabilities, SQL Injection, Web Exploit Tools, Misdirection, Reconnaissance, and Disruption Methods

UNIT-IV:

MALICIOUS CODE, DEFENSE & ANALYSIS TECHNIQUES:

Self-replicating replicating code, Worms, Viruses, Evading Detection and Elevating Privileges: Obfuscation, Spyware, Token Kidnapping, Memory Forensics, Honeypots, Malicious code naming, Intrusion detection systems

Learning Resources:

1. James Graham, Ryan Olson, Rick Howard, "Cyber Security Essentials", Auerbach Publications , CRC Press, 2011
2. Mike Shema, "Anti-Hacker Tool Kit (Indian Edition)", Mc Graw Hill, 2014
3. Cyber Security - Understanding Cyber Crimes, Computer Forensics and Legal Perspectives, Nina Godbole and SunitBelpure, Publication Wiley , 2011
4. <https://www.edx.org/micromasters/ritx-cybersecurity>
5. <https://www.coursera.org/specializations/cyber-security>
6. <http://nptel.ac.in/courses/106105031/>
7. <https://www.netacad.com/courses/security/introduction-cybersecurity>

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	<input type="text" value="2"/>	Max. Marks for each Internal Tests	:	<input type="text" value="30"/>
2	No. of Assignments	:	<input type="text" value="2"/>	Max. Marks for each Assignment	:	<input type="text" value="5"/>
3	No. of Quizzes	:	<input type="text" value="2"/>	Max. Marks for each Quiz Test	:	<input type="text" value="5"/>
Duration of Internal Tests		:	1 Hour 30 Minutes			

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