**Annexure ‘CD – 01’**

**FORMAT FOR COURSE CURRICULUM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **L** | **T** | **P/S** | **SW/F W** | **TOTAL**  **CREDIT UNITS** |
| 3 | - | - | - | 3 |

# Course Title: Cyber Security Credit Units: 3

**Course Level: UG Course Code: CSE436**

**Course Objectives:** The purpose of this course to accustom the students about the threats, vulnerabilities, and their consequences. The objective is to educate them about importance of cyber security, implications to organizations and fundamentals to cyber security management.

**Pre-requisites:** Computer Networks

# Course Contents/Syllabus:

|  |  |
| --- | --- |
|  | **Weightage (%)** |
| **Module I : Introduction to Cyberspace** | **20** |
| Descriptors/Topics :  Definition of Netizen, Malware and its existence, Definition of Security hole, Security Patch, Viruses, Worms, Trojan Horses, Bot Networks, Social Engineering, Avoiding Malwares, Spyware, Adware, Keyboard Loggers, Rogue Software and Scareware, Ransomware, White Hat Search Engine Optimization, Current and Fulltime Threats, Hackers, Hacker’s  tools, E-Mail and SPAM, Spoofing, Spammer’s tools, SPIM, Cyberbullies, Online Reputation Attacks, Phishing, Cyber stalkers |
| **Module II The Security Environment** | **20** |
| Descriptors/Topics  Threats, vulnerabilities, and consequences, Advanced persistent threats, The state of security today, Why security matters, introduction to cryptography, Access Control, Software Development Security, Introduction to Cybersecurity and its importance |
| **Module III Principles of Cybersecurity** | **20** |
| Descriptors/Topics  The interrelated components of the computing environment, Cybersecurity models (the CIA triad, the star model, the Parkerian hexad), computer security, information security, and information assurance |
| **Module IV : Organizational Implications** | **20** |

|  |  |
| --- | --- |
| Descriptors/Topics  Cost of Cybercrimes and IPR Issues: Lesson for Organizations, Web Threats for Organizations: The Evils and Perils, Security and Privacy Implications from Cloud Computing, Social Media Marketing: Security Risk and Perils for Organization, Social Computing and the Associated Challenges for Organizations, Protecting People’s Privacy in the Organization, Organizational Guidelines for Internet Usage, Safe Computing Guidelines and Computer Usage Policy, Incident Handling: An Essential Component, Intellectual Property in the Cyberspace of Cybersecurity, Importance of Endpoint Security in Organizations. |  |
| **Module V : Cybersecurity Management** | **20** |
| Descriptors/Topics  Cybersecurity Management Concepts, Security governance, Management models, roles, and functions, Enterprise Roles and Structures, Information security roles and positions, Strategic planning and security strategy, The information security lifecycle, The System Security Plan (SSP) |

**Course Learning Outcomes:**

**At the end of this course, the students will be able to**

* Describe and implement various type of cyber attacks.
* Explain the importance of security in cyberspace.
* Discuss and explain various cybersecurity models
* Summaries various implications of cybercrime to the organization.
* Describe various strategies for management of cybersecurity

# Pedagogy for Course Delivery:

# The class will be taught using theory and case based method. Online teaching will be used. Online resources like NPTEL Youtube etc will be used. The instructor will discuss practical problems to the students for better understanding of the concept. The instructor will provide Some self learning online resources to students.

**List of Professional Skill Development Activities (PSDA):**

NA

# Assessment/ Examination Scheme:

|  |  |  |
| --- | --- | --- |
| **Theory L/T (%)** | **Lab/Practical/Studio (%)** | **Total** |
| **100** |  | **100** |

**Theory Assessment (L&T):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Continuous Assessment/Internal Assessment 40%** | | | | | **End Term Examination 60%** |
| **Components (Drop down)** | **Attendance** | **Class Test** | **HA** | **Quiz** | **EE** |
| **Weightage (%)** | 5 | 15 | 10 | 10 | 60 |

**Lab/ Practical/ Studio Assessment:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Continuous Assessment/Internal Assessment** | | | | **End Term Examination** | | |
| **Components (Drop down** |  |  |  |  |  |  |  |
| **Weightage (%)** |  |  |  |  |  |  |  |

**Text Reading:**

* + [Cybersecurity, Wiley Publishers, Nina Godbole and Sunit Belapur](http://www.amazon.in/Data-Science-Scratch-Principles-Python-ebook/dp/B00W4DTP2A/ref%3Dsr_1_2?ie=UTF8&amp;qid=1495784417&amp;sr=8-2&amp;keywords=python%2Bdata%2Bscience)

# References:

* [Cybersecurity: Managing Systems, Conducting Testing and Investigating Intrusions, Wiley, Thomas J. Mowbray](http://www.amazon.in/Cybersecurity-Managing-Conducting-Investigating-Intrusions/dp/812654919X/ref%3Dsr_1_1?ie=UTF8&amp;qid=1495792146&amp;sr=8-1&amp;keywords=cybersecurity)
* [Cybersecurity and Cyberwar: What Everyone Needs to Know,](http://www.amazon.in/Cybersecurity-Cyberwar-What-Everyone-Needs/dp/0199918112/ref%3Dsr_1_4?ie=UTF8&amp;qid=1495792146&amp;sr=8-4&amp;keywords=cybersecurity) Oxford University Press, Peter W. Singer and [Allan Friedman](http://www.amazon.in/Allan-Friedman/e/B00HHDI4XS/ref%3Dsr_ntt_srch_lnk_4?qid=1495792146&amp;sr=8-4)
* [Enterprise Cybersecurity,](http://www.amazon.in/Enterprise-Cybersecurity-Successful-Cyberdefense-Advanced/dp/1430260823/ref%3Dsr_1_5?ie=UTF8&amp;qid=1495792146&amp;sr=8-5&amp;keywords=cybersecurity) Scott Donaldson and Stanley Siegel
* [Cybersecurity: The Essential Body of Knowledge,](http://www.amazon.in/Cybersecurity-Essential-Knowledge-Dan-Shoemaker/dp/1435481690/ref%3Dsr_1_9?ie=UTF8&amp;qid=1495792146&amp;sr=8-9&amp;keywords=cybersecurity) Delmar Cengage Learning, [Dan Shoemaker](http://www.amazon.in/Dan-Shoemaker/e/B001IQWF94/ref%3Dsr_ntt_srch_lnk_9?qid=1495792146&amp;sr=8-9) and [Wm. Arthur Conklin](http://www.amazon.in/Wm.-Arthur-Conklin/e/B0032L8506/ref%3Dsr_ntt_srch_lnk_9?qid=1495792146&amp;sr=8-9)

# Additional Reading:

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