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| **NAME OF DEPARTMENT:** | | | | | | | | | | | | | | | | | | | School of Computing | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Subject Name:** | | | | | | | | | Network Security and Cyber Laws | | | | | | | | | | | | | | | | | | | | | | | | | **Subject Code:** | | | | | | | | | TBC 603 | | |
|  | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | |  | | |
| **Course Name:** | | | | | | | | | Bachelor of Computer Applications (BCA) | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | |  | | |
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| **1** | **Contact Hours:** | | | | | | | | | | | 45 | | | |  | | | | | | | | | | | | | | | | | | | **L** | | 3 | | | **T** | | 0 | | **P** | 0 | |
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| **2** | **Examination Duration(Hrs):** | | | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | 0 | 3 |  | **Practical** | | | | | 0 | | 0 | |  | | | | | |
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| **3** | **Relative Weightage:** | | | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | 25 | | **MTE:** | | | 25 | | **ETE:** | | | | 50 | | | |  | | | | |
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| **4** | **Credits:** | | | | | | 0 | | | 3 | |  | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | | | |  | | | | |
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| **5** | **Semester:** | | | | | | |  | | | |  | | | **\*** | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | **Autumn** | | | | | | | **Spring** | | | | | | | **Both** | | | | | | |  | | | | | | | | | | | | | | | | | | |
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| **6** | **Pre-Requisite:** | | | | | | | | | | | Knowledge of computer networks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **7** | **Subject Area:** | | | | | | | | | | | 1. **Computer Application** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **8** | **Objective:** | | | | | | | | | | **To familiarize students with Network Security** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **9** | **Course Outcome:** | | | | | | | | | | | | | | A student who successfully fulfills the course requirements will be able to: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 1** | | | | | | | | | | | | | | Identify some of the factors driving the need for network security. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 2** | | | | | | | | | | | | | | Understand the concept of Classical and Advanced Encryption techniques. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 3** | | | | | | | | | | | | | | Identify and classify particular examples of attacks. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 4** | | | | | | | | | | | | | | Understand the concept of Public Key Cryptography. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 5** | | | | | | | | | | | | | | Understand the concept of Cyber Laws and provisions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 6** | | | | | | | | | | | | | | Understand the basics of IT Act 2000. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **10** | | **Details of the Course:** | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | | | | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | | | |
| **1** | | | | **Introduction to Network security:** Security: Attacks, Services & Mechanisms. **Conventional Encryption:** Conventional Encryption Model, and Steganography.**Modern Techniques:** Thoughts of Feistel Design, Block Ciphers and Stream Ciphers, Modern Block Ciphers, Simplified DES, Block Cipher Principles, DES Standard, DES Strength, Differential & Linear Cryptanalysis, Block Cipher Design Principles, Block Cipher Modes Of Operation. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | |
| **2** | | | | **Public Key Encryption:** Public-Key Cryptography: Principles Of Public-Key Cryptosystems, RSA Algorithm, Key Management, Random Number Generators. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | |
| **3** | | | | **Hash Functions:** Message Authentication & Hash Functions: Authentication Requirements, Authentication Functions, Digital Signatures, Digital Signature Standard, Digital Signature Algorithm. **Network Security:** Authentication Applications- Kerberos, X.509, Electronic Mail Security**,** Secure Socket Layer & Transport Layer Security. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | |
| **4** | | | | **Cyber Laws:** Introduction of the Cyber Law, Scope of Cyber Laws, Privacy and Freedom Issues In The Cyber World, Cyber-Crimes.**Object and Scope of the IT Act:** Genesis, Object, Scope of the Act, E-Governance and IT Act 2000 Legal recognition of electronic records, Legal recognition of digital signature, Use of electronic records and digital Signatures in Government and its agencies. IT Act in detail. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | |
| **5** | | | | **Information Gathering, Scanning:** Traceroute, Ping sweeping, Port Scanning, ICMP scanning.  **DOS Attacks:** Ping of Death, Teardrop, SYN flooding, Land Attacks, Smurf Attacks, UDP flooding, Hybrid DOS Attacks, Application Specific, Distributed Dos Attacks. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | | |
|  | | | | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **45** | | | | | | |
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| **11** | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | |
| **Sl. NO.** | | | **NAME OF AUTHORS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION** | | | | | |
| **1** | | | William Stallings, “Cryptography and Network Security: Principles and Practice”, Prentice Hall, New Jersey. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2008 | | | | | |
| **2** | | | Johannes A. Buchmann, "Introduction to Cryptography" Springer-Verlag | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2000 | | | | | |
| **3** | | | Atul Kahate, "Cryptography and Network Security" TMH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2005 | | | | | |
| **4** | | | Network Security Bible: Eric Cole, Wiley dreamtech India Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2005 | | | | | |
| **5** | | | Practical Cryptography “Bruce Schneier” Wiley dreamtech India Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2005 | | | | | |