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| **TITLE** | **SECURITY STANDARDS** |
| **SUBJECT CODE** | **20BCA5S42** |
| **HOURS PER WEEK** | **4 Hrs./Week** |
| **CREDITS** | **4** |

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| **COURSE OBJECTIVES** | |
| **COB1** | Explain different network standards |
| **COB2** | Explain Cyber security standards |
| **COB3** | Explain VOIP Security Standards |

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| **COURSE OUTCOMES** | |
| **CO1** | Students will understand about different network standards |
| **CO2** | Students will understand about different Cyber Security Standards |
| **CO3** | Students will understand different VoIP security standards |
| **CO4** | Students will understand about Encryption and IPsec |
| **CO5** | Students will understand about Internet Standards |

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| **SYLLABUS** | | | | |
| **Module No** | **Contents** | **Tools Used/ Assessments and Activity** | **CO Mapping** | **PO Mapping** |
| **Module 1 (12 Hours)** | **Introduction to networking standards**  What is networking standards, outline of networking standards, why are standards important? Types of standards : Proprietary Standards, open standards, de facto standards, networking standards : International Networking Standards organizations, Standards organisations: Interna  tional Organization of Standardization(ISO) , American national standards institute (ANSI), Information Technology Industry Council (ITIC), National Committee for Information Technology (NCITS), Institute of Electrical and Electronics Engineers (IEEE), Electronic Industries Alliance (EIA), Telecommunications Industry Association (TIA), International Telecommunication Union-Telecommunication Standardization Sector (ITU-T), European Telecommunications Standards Institute (ETSI). | **Assessment:** Internal Exam, Preparatory Exam  **Activity 1:**  Ppt presentation | CO1 | PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12 |
| **Module 2 (12 Hours)** | **Cyber Security Standards**  Cyber Security Standards overview: Cyber Security Standards Characteristics, Cyber Security Standards Interaction, Standards and Guidelines, Cyber Security Standards Developers: International Standards Development Organizations, Regional Standards Development Organizations, National Standards Development Organizations, Consortia, Industry Alliances, and Associations, US Government Standards Developers, Security Standards : ISO, ISO 27000 Series, IT Act, Copyright Act, Patent Law, IPR: Concept of Trademarks / in Internet Era ,Cyber Squatting, Reverse Hijacking, Jurisdiction in Trademark Disputes, Copyright in the Digital Medium, Copyright in Computer Programmes, Copyright and WIPO Treaties | **Assessment:** Internal Exam, Preparatory Exam  **Activity 1:** MCQ test | CO2 | PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12 |
| **Module 3 (12 Hours)** | **VoIP Security Standards**  Overview of VOIP, Quality of service issues: Latency, Jitter, Packet Loss, Bandwidth, Speed, Failure and backup, SIP: SIP architecture, Existing Security Features, Firewalls, Address Translation and Call Establishment: Firewalls, Network Address Translation, Firewalls, NATs and VOIP Issues, Calls Setup considerations with NATs and Firewalls, Mechanisms to solve NAT problem, VPNs and Firewalls. | **Assessment:** Internal Exam, Preparatory Exam  **Activity:** MOOC Course | CO3 | PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12 |
| **Module 4 (12 Hours)** | **Encryption and IPsec**  IPsec, Role of IPsec in VOIP, Local VPN Tunnels, Difficulties arising from VOIPSec, Scheduling and lack of QoS in crypto Engine, Encryption/ Decryption Latency, Expanded Packet Size, Secure Real Time Protocol(SRTP), Key Management for SRTP-MKEY, Better Scheduling schemes, Resolving NAT/IPsec Incompatibilities.  **VOIP Risks, Threats, &Vulnerabilities**  Confidentiality and Privacy, Integrity Issues, Availability and Denial of Service DoS | **Assessment:** Internal Exam, Preparatory Exam  **Activity:** Activity 2 : Flip class Activity | CO4 | PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12 |
| **Module 5 (6 Hours)** | **Internet standards**  Internet architecture: Internet overview, Internet components –  Local Area Networks, Access Networks, Core Networks, Routers, Transmission infrastructure, ISPs. Packet switching fundamentals-Packet Switching versus Circuit Switching, Connectionless packet switching (IP). Internet Standards: Standards bodies  and the standards process, IETF, ITU, IEEE, ATM Forum. Standardization process, Policies, Standards and Practices: Types of Policy, EISP, ISSP, Police, review and modification, SysSP, ACL policies, Rule Policies. | **Assessment:** Internal Exam, Preparatory Exam  **Activity:** Poster presentation | CO5 | PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12 |

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| **Textbook and References** | |
| 1 | Security Considerations for voice over IP systems by D. Richard Kuhn, Thomas J. Walsh, Steffen Fries , Jan 2005 |
| 2 | Information Security Policies, Procedures, and Standards: A Practitioner's Reference by Douglas J. Landoll, Auerbach Publications; 1st edition, May 2016. |