**DEPARTMENT OF INFORMATION TECHNOLOGY, NITK SURATHKAL**

**B.Tech Honors- Course plan (Dec- Apr 2021)**

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| **Faculty in-charge** | Dr. Bhawana Rudra | **Year and Semester** | Dec-Apr 2021 |
| **Course Code:** | IT352 | **Course Name:** | INFORMATION ASSURANCE AND SECURITY |
| **Core/Elective/MLC:** | Core | **L-T-P:** | 3-0-2 |
| **Pre-requisites:** | Computer networks and Network Security | **Contact Hours:** | **Dec-Apr**  3 per week - Lecture,  2 per week – Lab |
| **Type of course:**  **(Lecture/Tutorial/Seminar/Project)** | Lecture and Lab | **Course Assessment Methods:**  **(both continuous and semester-end assessment)** | **Theory: (60%)(Online)**  **20% Midsem Theory Exam**  **10% Online Quiz and Assignments**  **30% End Sem Theory Exam**  **Lab: (40%)(online)**  **15% Course Minor Project MidSem Eval.**  **25% Course Minor Project EndSem Eval.** |
| **Course Description:**  In this course students will learn,  CO1:Understand the need of Security Systems and gain knowledge on Key mechanisms  CO2: Apply key mechanisms models for the avoidance of attacks  CO3: Analyse different techniques with the help of case studies  CO4: Evaluate past and current research issues in the field of cyber Security and come up with new and innovative solutions  **Course Objectives:**  The aim of this course is:  CO1[L1,L2,L3]: To understand and explain the need of Security systems and apply the key mechanisms  CO2[L4]: To address the issues of security in various applications  CO3[L5]: To analyze the security aspect in various applications  CO4[L6] : To design smart and secure applications. | | | |
| Course Plan: Theory:(CO1, CO2 and CO3)   |  |  | | --- | --- | | Week 1 &2: | Cryptography: Private and Public Key Encryption, Uses of Encryption | | Week 3 &4: | Network Security: threats, controls – Encryption, Authentication, | | Week 5 &6: | Network Security tools (Firewalls, Intrusion Detection), Firewall and DMZ, Piracy | | Week 7 &8: | Program Security: non-malicious program errors such as buffer overflow, viruses, other malicious code, targeted malicious code, controls against program threats; | | Week 9 &10: | Operating Systems: protected objects, methods of protection, access control, authentication; Web Security; Data security and | | Week 11 &12: | Privacy (Introduction, Rights, Legal Issues, Online Services, Facebook, Google, Social Web  and Virtual Worlds), privacy; Forensics and Incident response;  Security Policies and Procedures , Recent Trends | | | | |
| Text Books and/or Reference Books:   1. "Network Security Essentials”, William Stallings, 4th Edition, Pearson Education, 2008. 2. "Cryptography & Network Security”, Atul Kahate, McGraw Hill, 2004. 3. "Information Assurance–Dependability & Security in Networked Systems”, Yi Qian et al, Morgan Kaufmann, 2008. "A. Abraham et al,Computational Intelligence in Information assurance and security”,N.Nedjah, Springer | | | |

* **Course Minor project Evaluation Components: (15% Mid sem evaluation , 25% End sem evaluation (online))**
  + Literature Survey (5 Marks)
  + Architecture (10 Marks)
  + Presentation (10 Marks)
  + Results and Discussion (10 Marks)
  + Individual Contribution (5 Marks)

**Assessment CO matrix**

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| **Assessment Type** | **Course Outcome (CO)** | | | |
| **CO1** | **CO2** | **CO3** | **CO4** |
| Mid Sem Theory Exam(MT) | X | X | X | X |
| Lab PracticalAssignment | X | X | X | X |
| Course Project |  |  | **X** | **X** |
| Written assignment |  |  | X | X |

**Course Instructor**

**[Bhawana Rudra]**