PVP SIDDHARTHA INSTITUTE OF TEHNOLOGY, KANURU, VIJAYAWADA (AUTONOMOUS)

INFORMATION TECHNOLOGY

STEGANOGRAPHY AND BIOMETRICS

| Course Code | 19IT4601A Year | | III | Semester | II | |
|----------------------------|-----------------------|--------------------|-------|---------------------|--------|--|
| Course Category | PC | Branch | IT | Course Type | Theory | |
| Credits | 3 | L-T-P | 3-0-0 | Prerequisites | DCCN | |
| Continuous Internal | | Semester En | | | | |
| Evaluation: | 30 | Evaluation: | 70 | Total Marks: | 100 | |

| | Blooms Taxonomy Level | | |
|---------|--|----|--|
| Upon su | | | |
| CO1 | Understand the basics of Steganography | L1 | |
| CO2 | Summarize the Biometric benefits and solutions | L2 | |
| CO3 | Finger Scan, Facial Scan and Iris Scan Technologies and identify different Biometric Applications. | L3 | |
| CO4 | Analyze Voice Scan, other physiological Biometrics and Behavioral Biometrics. | L4 | |

| | Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight) | | | | | | | | | | of | | | |
|---------|---|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|-------|----------|----------|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO1 0 | PO1 1 | PO1 2 | PSO 1 | PSO 2 |
| CO 1 | | | 2 | 2 | | 2 | | - | - | | | | 2 | 2 |
| CO 2 | | | 2 | 2 | | 2 | | | | | | | 2 | 2 |
| CO 3 | | | 2 | 2 | | 2 | | | | | | | 2 | 2 |
| CO 4 | | | 2 | 2 | | 2 | | | | | | | 2 | 2 |

| | Syllabus | | | | |
|------------|--|--------------|--|--|--|
| Unit No | Contents | Mapped CO | | | |
| I | Steganography: Overview, History, Methods for hiding (text, images, audio, video, speech etc.), Issues: Security, Capacity and Imperceptibility. Steganalysis: Active and Malicious Attackers, Active and passive steganalysis. | CO1 | | | |
| II | Introduction: Benefits of biometric security – Verification and Identification – Basic working of Biometric matching – Accuracy – False match rate – False non-match rate – Failure to enroll rate – Derived metrics – Layered biometric solutions. | CO2 | | | |
| III | Finger Scan: Features – Components – Operation (Steps) – Competing finger Scan technologies – Strength and weakness. Types of algorithms used for interpretation. | CO3 | | | |
| IV | Facial Scan: Features – Components – Operation (Steps) – Competing facial Scan technologies – Strength and weakness. Iris Scan: Features – Components – Operation (Steps) – Competing iris Scan technologies – Strength and weakness. | CO3 | | | |
| v | Voice Scan: Features – Components – Operation (Steps) – Competing voice Scan (facial) technologies – Strength and weakness. Other physiological Biometrics: Hand scan – Retina scan – AFIS (Automatic Finger Print Identification Systems)-DNA Scan – Behavioral Biometrics – Signature scan keystroke scan. | CO4 | | | |

Learning Resources

Text books

- 1. Peter Wayner, Disappearing Cryptography Information Hiding: Steganography & Watermarking, Morgan Kaufmann Publishers, New York, 2002.
- 2. Biometrics Identity Verification in a Networked World Samir Nanavati, Michael Thieme, Raj Nanavati, WILEY- Dream Tech, 2007.
- 3. Biometrics for Network Security- Paul Reid, Pearson Education, 2004.

References

- 1. Introduction to Biometrics, Anil K. Jain, Arun A. Ross and Karthik Nanda kumar, 2011.
- 2. Guide to Biometrics, Ruud Bolle, Jonathan Connell, Sharanth Chandra Pankanti, Nalini Ratha and Andrew Senior, 2003.
- 3. Biometric Systems Technology, Design and Performance Evaluation, by James L. Wayman, Anil K. Jain, Davide Maltoni and Dario Maio, 2004.
- 4. Handbook of Face Recognition, Stan Z. Li and Anil K. Jain, 2005

e-Resources and other Digital Material

- 1. http://freevideolectures.com/Course/3252/Biometrics
- 2. http://nptel.ac.in/courses/106104119/