MAHARSHI DAYANAND UNIVERSITY
DEPARTMENT OF FORENSIC SCIENCE
Syllabus-Certificate Course-2023-24
Biometric Identification-(6 months Certificate Course)
Scheme of Certificate Course Examination-(Biometric Identification)

Sr. No.	Paper Code	Nomenclature	Credits	Marks		Total Marks
				Internal	External	
1.	23FSCCC01	Biometric Identification	02	15	35	50
2.	23FSCCCL1	Lab Course-C1 (Based on Biometric Identification)	02	15	35	50

Biometric Identification

Paper Code-23FSCCC01	Credits-2	Maximum Marks-50

Course Objectives
1. To understand the concept of biometric authentication.
2. To study conventional and advanced biometric techniques.
3. To study biometric related issues implications.

Course Outcomes:

1. Students would know about recent methods of Biometrics
2. Students would be able to understand the concepts of Biometric Identification.
3. Students would know the use & applications of the Biometric Identification.

UNIT -I
History and Development of biometric authentication, Scope of biometric methods, Biometric templates and references, Principles of biometric database collection and usage, Principle/s of image capture, Sensors, Image pre-processing and filtering. Biometric codes, and Statistical Properties.

Unit-II
Fingerprint recognition: Fingerprint identification, Types, Classification, Development methods, comparison based on class features and Galton's details/minutiae. AFIS: Basic concept, Fingerprint image pre-processing and detection of patterns using singularities in fingerprints classification. Fingerprints in forensics and biometrics.

UNIT -III
Fundamental of Anthropometry and Face recognition, Fundamentals, Development and analysis of Ear-prints and Lip prints.

UNIT -IV
Techniques of Biometric: Recognition of Iris (eye scan), Handwriting, Signatures, Footprint, Speaker (voice), Thermal imaging and Hand geometry**.** Errors and limitations of biometric systems, Legal status and implications of biometric methods.

Suggested readings:
1. P. Komasinski, P.T. Higgins, K.M. Higgins, Lisa. K. Fox (2005), Fingerprint Identification System (AFIS), Elsevier Acad. Press.
2. G.R. Sinha (2013) Biometrics: Concepts and Applications with CD. Wiley India.
3. S. Indira Sudha (2013) Biometric & Fingerprint Analysis. Selective & Scientific Books, New Delhi

Lab Course-C1 (Based on Biometric Identification)

Paper Code-23FSCCCL1	Credits-2	Maximum Marks-50

Practicals:
1. Identification & development of Finger print.
2. Identification & development of Ear print.
3. Identification & development of Lip print.
4. Identification & development of Foot-print.