Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Science College
Semester-5 (B.Sc)

Subject: Forensic Anthropology - BSCFS15307

Type of course: Major

Prerequisite: Basic understanding of biology and human physiology especially skeletal system

Rationale: This course covers forensic science and anthropology that helps solve crimes by identifying victims, determining the cause of death, and providing evidence in court. It's used in a variety of investigations, including homicides, mass disasters, and other violent crimes. Students will learn how Forensic anthropologists work with law enforcement, medical professionals, and other experts to solve crimes. They often testify as expert witnesses in murder trials.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				ESE		CCE			
CI	T	P	C	Theory	Practical	MSE	LWA/V	ALA	
3	0	2	4	75	25	30	20	50	200

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; LWA - Lab Work Assessment; V – Viva voce; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

3 Credits * 25 Marks = 75 Marks (each credit carries 25 Marks) Theory
1 Credits * 25 Marks = 25 Marks (each credit carries 25 Marks) Practical
SEE 100 Marks will be converted in to 50 Marks
CCE 100 Marks will be converted in to 50 Marks
It is compulsory to pass in each individual component.

GYANMANJARI INNOVATIVE UNIVERSITY BHAVNAGAR

Course Content:

Unit No	Course Content	Hrs	% Weightage
1	**Introduction to Forensic Anthropology:** Brief History of Forensic Anthropology, Scope of Forensic Anthropology, importance of forensic anthropology , Basic Human Skeletal System, human skeleton vs other mammal's, legal and ethical issues in forensic anthropology, Case Study.	15	25%
2	**Recent trends in forensic anthropology:** Introduction, DNA fingerprinting: DNA, basis, applications; other bodily identification: somatometric and somatoscopic identification, skeletal system, retina and iris, ear, fingerprint. Anthropometry, history, significance and divisions in anthropometry. Various anthropometric and osteometric variation in human population.	10	25%
3	**Personal identification :** Introduction to Bertillonage system, portrait parle, ideal portrait parle, determination of sex from skeleton, age estimation, determination of race, height estimation from long bones.	10	25%
4	**Forensic Odontology:** Definition, history, human dentition, bite-marks: methods of collection, preservation, recording, forensic significance of bitemarks; taphonomy, necrology and decomposition.	10	25%

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Case study:** Students will create a case study involving forensic anthropology scenario. They will describe the incident, analyze evidence such as skeletal remains and artifacts, and detail the forensic techniques used. Finally, students will outline the legal proceedings and the punishment given to the perpetrator and will upload the same in the GMIU portal	10
2	**DNA Dossier: Mapping the Genetic Trail** Students write a simplified report explaining DNA fingerprinting, its basis, and real-life forensic applications using a case study or hypothetical scenario and upload it on GMIU Web Portal.	10

3	**Bertillonage System:** Students have to individually take Bertillon measurements listing 11 measurements and have to prepare a report of the same and upload it on the GMIU web portal.	10
4	**Mini Project :** Students need to do a mini – project on Forensic Anthropology and upload it on GMIU web Portal.	10
5	**Attendance**	10
Total		50

List of Practical:

Sr. No	Descriptions	Unit No	Hrs
1	Draw and Label the Bones of Human Body.	1	3
2	Identification of various bones (appendicular, Pelvic and skull bones).	1	3
3	To perform comparative study between human and animal skeleton system	2	3
4	Estimation of height using long bones	2	3
5	To record and study the Bertillonage system.	3	3
6	Determination of Age and Sex of a Person from Long Bones.	3	3
7	Determination of Age and Sex of a Person from Skull	3	3
8	To prepare a chart of permanent and temporary dentition.	4	3
9	To prepare the dental casting	4	3
10	To study the significance of Gustafson's method.	4	3
		Total	30

Suggested Specification table with Marks (Theory):75

Distribution of Theory Marks **(Revised Bloom's Taxonomy)**						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	30%	40%	30%	00	00	00

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	Discuss the legal and ethical considerations involved in handling human remains in forensic contexts.
CO2	Differentiate between anthropometric and osteometric variations observed in diverse human populations.
CO3	Analyze skeletal traits for the determination of race and ancestry in forensic cases.
CO4	Assess the forensic significance of bite marks in the identification of suspects and victims.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.
From the content 10% topics are suggested for flipped mode instruction.
Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory
The internal evaluation will be done on the basis of Active Learning Assignment
Practical/Viva examination will be conducted at the end of semester for evaluation of perfor3mance of students in laboratory.

Reference Books:

[1] Jason P. J. & Simpson K. (2014).Simpson's Forensic Medicine, NY, CRC Press.
[2] Mallet X. (2014). Advances in Forensic Human Identification. NY,CRC Press.
[3] Krogman, W. M., &İşcan, M. Y. (1986). The Human Skeleton in Forensic Medicine. Charles C Thomas Publisher.
[4] Tilstone, W. J., Savage, K. A., & Clark, L. A. (2006). Encyclopedia of Forensic Science. ABC-CLIO.