Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Science College
Semester-2(M.Sc)

Subject: Practical – MSCFS12512

Type of course: Major

Prerequisite: Basic knowledge of instrumentation of chemistry, Physics and practical skills of Forensic serology and questioned document.

Rationale: Allowing them to develop the necessary technical skills, critical thinking abilities, and confidence to effectively analyze evidence and contribute to criminal investigations as future forensic scientists; essentially bridging the gap between classroom learning and professional practice in a controlled environment.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks		Practical Marks		CA	
CI	T	P	C	ESE	MSE	V	P	ALA	
0	0	12	6	00	00	40	80	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1.	**JOURNAL** Unit wise practical will be given by faculty and students will prepare a journal for the practical.	30
Total		**30**

List of Practical :

Sr. No.	Descriptions	Hrs
1.	To compare and analyze fiber	3
2.	To perform density gradient method to compare unknown soil sample with reference sample	3
3.	To perform density gradient method to compare unknown and reference glass evidence	3
4.	To study the security features of currency notes Using VSC	3
5.	To identify type of blood group by using ABO blood grouping method	6
6.	To perform preliminary examination of suspected blood stains	3
7.	To perform confirmatory tests for suspected blood stains	3
8.	To study the working and significance of the following in forensic science: 1. Stereomicroscope 2. Compound microscope 3. SEM 4. TEM	15
9.	To separate the components of drug (paracetamol) using TLC	6
10.	Identification of saliva stains using Starch-iodine test.	3
11.	To study and compare hairs from different domestic animals	6
12.	To study the structure and anatomy of human hairs	6
13.	To study different types of glass fractures	6
14.	Identification of IP address	6

15.	To describe the introduction of computer, its accessories and operating system	6
16.	To identify and compare unknown cartridge case with reference cartridge case	6
17.	To identify different types of blood spatters and state their significance in forensic science	6
18.	To prepare a case report on a case involving arson	6
19.	To describe, with the aid of diagrams, firing mechanism of various types of firearms	6
20.	To differentiate with the aid of diagrams, contact wound, close range and distant wound.	3
21.	To perform a trap case using phenolphthalein test and study the sections of bribery	3
22.	To separate the components of inks using TLC	3
23.	To separate the components of explosive substance using TLC	3
24.	Examination of explosive substance for presence of nitrates	3
25.	Sketching of the given crime scene using baseline method	3
	TOTAL	**120**

Suggested Specification table with Marks (Theory):60

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	40%	30%	10%	-	-

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.

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 performance of students in laboratory.

Reference Books:

1) Practical Chemistry by V.K. Ahluwalia.
2) Practical Organic Chemistry 1st edition by Hitesh G. Raval, Sunil L. Baldania and Dimal A. Shah – Nirav Prakashan.
3) Practical Organic Chemistry by Dr. M. Satish Kumar.