### KHARAGPUR COLLEGE

## DEPARTMENT OF CHEMISTRY Certificate Course on "Chemistry in Forensic Science (30 HRS)"

Date: 01.03.2022

This is to inform to all 2<sup>nd</sup> & 4<sup>th</sup> Semester Chemistry Honours students, a certificate course of duration of 30hrs will be conducted by Department of Chemistry from 7<sup>th</sup> March 2022 onwards on above mentioned topic. Interested students are requested to contact the course coordinators for enrollment. The detailed course schedule will be intimated in due course of time.

Course Fee: Rs. 100/-

Course Coordinators: Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry

Smt. Kuheli Pramanik, Asst. Professor, Dept. of Chemistry

(Dr. Bidyut Samanta)

(b) 01/03/2022

Principal

Kharagpur College

Principal

Kharagpur College

## SUMMARY REPORT OF THE CERTIFICATE COURSE

Topic of the Certificate Course: Chemistry in Forensic Science

Organized by: Department of Chemistry, Kharagpur College.

Duration: 7<sup>th</sup> March, 2022 to 17<sup>th</sup> March, 2022 (duration: 30 hrs).

Participants: Thirty six (37) students of B.Sc (Chemistry Honours), Kharagpur College.

Nature of delivery: Theoretical.

Resource Persons: Ten (10) resource persons were involved in the course.

Co-ordinators: : Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry, Smt. Kuheli Pramanik, Asst. Professor,

Dept. of Chemistry

Areas covered: This certificate course covered some fundamental topics related to forensic science.

Analytical Chemistry, Instrumental Techniques and Evidence Analysis was the major part of the focused course. Besides there are some topics like ethics and law, DNA analysis and explosion investigation in point of view of Chemistry also covered.

Course outcome: The course has been especially meant to make the students aware of the huge openings of the subject and also the challenges to be faced therein. During the tenure of the course discussions on different topics like analytical chemistry, instrumental chemistry, biological sampling, DNA analysis and fire & explosion investigation was elaborated. Students can differentiate forensic Chemistry and general Chemistry from the certificate course. Students first time learned the application of Chemistry in Forensic Science.

(Dr. Forid Saikh)

Assistant Professor, Department of

Forid Saix

Chemistry

Kharagpur College

Jt. Coordinator

Kuheli Bamanik (Smt. Kuheli Pramanik)

Associate Professor, Department of

Chemistry

Kharagpur College

Jt. Coordinator

Certificate course on "Chemistry in Forensic Science" organized by the department of Chemistry, Kharagpur College from 7th March 2022 onwards

## Syllabus Distribution

Si no.	Dates	Topics	Name of Teacher	Lecture hours
1	07.03.22	Introduction of forensic science	Dr. Forid Saikh	2
2		Principle of Analytical Chemistry-I	Sri Prasananna Duley	2
ω	08.03.22	Ethics and Legal Aspects of Forensic Science	Dr. Gagan Ch. Mandal	w
4		Principle of forensic science	Sri Kalyan Sur	2
5	09.03.22	Principle of Analytical Chemistry-II	Smt. Laboni Giri	2
6	10.03.22	Techniques and Instrumentations-I	Sri Sanjoy Kumar Bera	ω
7		Forensic Toxicology-I	Smt. Kuheli Pramanik	2
∞	11.02.22	Forensic Toxicology-II	Smt. Kuheli Pramanik	2
9		Chemical Analysis of Evidence-I	Dr. Sumit Kr. Ray	2
10	14.03.22	Forensic DNA analysis	Dr. Subhra Mishra	ω
11	15.03.22	Techniques and Instrumentations-II	Dr. Indranil Chakroborty	2
12	16.03.22	Chemical Analysis of Evidence-II	Dr. Forid Saikh	2
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Course Coordinators: Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry Smt. Kuheli Pramanik, Asst. Professor, Dept. of Chemistry

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Dr Bidyut Samanta
Principal

Kharagpur College

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# ATTENDANCE RECORD

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## Question paper for final evaluation of Certificate Course on Chemistry: Chemistry in Forensic Science Department of Chemistry, Kharagpur College

F.M.: 30 Time: 1 hour Date: 21.03.22 Answer any 10 questions (each question carries 03 marks)

- 1. What is forensic chemistry?
- 2. How does forensic chemistry differ from general chemistry?
- 3. Explain the role of analytical chemistry in forensic science?
- 4. How is the principle of chromatography applied in forensic investigations?
- 5. How is IR spectroscopy used to identify substances in forensic cases?
- 6. Outline the steps to detect a toxic substance in a biological sample?
- 7. What are the main steps in the process of DNA profiling?
- 8. Explain how forensic chemists analyse paint samples from a crime scene?
- 9. What methods are used to identify hair and fiber evidence?
- 10. What chemical reactions are involved in combustion?
- 11. Describe the forensic techniques used to identify explosive residues?
- 12. What are the challenges in distinguishing between accidental and intentional fire?
- 13. Discuss the ethical responsibilities of forensic chemists when handling evidence?
- 14. How can forensic chemists ensure their findings are admissible in court?