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### **CONTRIBUTOR (s)**

1. Department of Forensic Science

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# DEPARTMENT OF FORENSIC SCIENCE- ACTIVITIES

- International conference on advances in forensic science (icafs) 2022
- Inquisitor - inter-collegiate forensic science fest
- Career orientation session on cyber forensics and cyber security
- Atrium - intra-collegiate forensic science fest
- Guest lecture on practical approaches to questioned document examination
- In-house career orientation session
- Guest lecture on the role of forensic medicine in crime investigation
- Guest lecture on disaster victim identification

# INTERNATIONAL CONFERENCE ON ADVANCES IN FORENSIC SCIENCE (ICAFS) 2022

On 5th and 6th May 2022, the Department of Forensic Science, Kristu Jayanti College hosted the first edition of “International Conference on Advances in Forensic Science (ICAFS)”. With more than 300 participants, the conference was aimed at providing a platform for researchers, academicians, learners, and industry professionals to discuss, deliberate, and grow in the field of Forensic Science.

## Inauguration

Dr. Calistus Jude A L, Dean, Faculty of Science, Kristu Jayanti College, welcomed the chief guest, resource persons, and the delegates to the conference. Sir stressed on the need for constant upskilling in this technology-oriented field of Forensic Science.

Dr. Shayani Ghosh, Assistant Professor, Department of Forensic Science and Convener of ICAFS 2022, gave a prelude to the conference and entailed that the conference would have 4 technical sessions with a wide range of topics spanning the different domains of Forensic Science and also have multiple oral and poster presentations from the registered delegates.

The conference was inaugurated by Mr. Barry A Fisher, Retired Crime Lab Director, Los Angeles County, USA, who is a renowned author and pioneer in the field of Forensic Science with more than 30 years of field experience. The resource persons included experts from the different major disciplines of Forensic science with a range of interesting topics.

The presidential address during the inauguration was delivered by Fr. Lijo P Thomas, Financial Administrator, Kristu Jayanti College who was delighted to have the chief guest and resource

persons and delegates for the conference. He quoted the recent advancements in the field and requested the delegates to make use of this platform and come up with valuable insights in the field and also requested the conveners to come up with ways in which the conference can be expanded to future years as well.

The conference was officially inaugurated by Mr. Barry A Fisher, Retired Crime Lab Director, Los Angeles County, USA, who addressed the delegates and welcomed them. The theme of his talk was on the recent advancements and future scopes in the field. Mr. Fisher cited many new facets, which are the talk of the future in the field and set the tone for the conference to ponder on the new unknown. He also spoke of areas that may require a lot of understanding and may promise to be challenging in the recent future and encouraged the delegates to use the two days valuably.

The session was ended with a formal vote of thanks by Prof. Don Caeiro, Coordinator of the Forensic Science programme at Kristu Jayanti College and co-convenor of the conference.

Technical Session 1: Advancements in Forensic Biology: the past, present, and future.

The first technical session was addressed by Dr. Arun Sharma, Retd. Director, Directorate of Forensics Services, Himachal Pradesh, India. Sir, with his vast experience, could detail the sequence of improvement in the field of Forensic Biology from the past, beginning from the traditional means of investigating crimes using biological evidences. He quickly recapped the slow beginnings and went on to detail the present setup of the field. He explained multiple case studies, which were points of interest in the Indian context. Sir could also explain using some of his experiences on how biological evidences can be very helpful but also must be handled with care. Sir could also throw light on the future scope of the field, the expected challenges, and

how we could face them.

Finally, the session was concluded by Dr. Sharma answering a couple of queries from the delegates about the topic. This session proved to be fruitful in enhancing the delegates in the domain and could also throw light on the expected growths in the field.

Technical Session 2: Advances in Anti-doping analysis from her experience in the field of Sports Forensics.

The second technical session was handled by Dr. Shobha Ahi, Deputy Director, Drug Control Centre, King's College, London, UK, who has a vast experience in both India as well as world-wide in the field of Anti-doping in sports. Ma'am, with her experience, could explain the basics, the protocols, and the reporting mechanism in the field. The delegates were also meticulously explained the analysis behind cases involving the use of performance-enhancing drugs in sports.

Beginning from the collection of samples, ma'am explained the extraction techniques, the spot tests, the instrumental techniques available, and the interpretation involved in these cases. The use of spectrophotometry and chromatography was explained in great detail. The recent advances were highlighted, and the delegates could understand how the scope of the field is fast evolving and the relevance to forensic science and existing forensic standards in this field.

The session ended with questions from the delegates, which were patiently and detailedly explained by the speaker.

Technical Session 3: Emerging challenges in Questioned Document Examination

The third technical session was from the physical science domain and focused on the field of Questioned Document Analysis. The session was addressed by Dr. J K Semwal, Retd. Senior Faculty from the prestigious LNJN NICFS, New Delhi, India, who is an

established academician from the prestigious institution. Sir started off by explaining about the problems encountered in this field due to its subjective nature of examination and reporting. He stressed that even though this lacuna exists, it also provides for further enhancing the field by the use of careful and validated techniques.

Sir systematically handled each lacuna and broadened the delegates' thinking by pointing out the scopes available and listing the possible research areas which are emerging in the field. He explained about the use of information technology, computer systems, artificial intelligence, and statistical modelling and also included the possibility of simulated handwriting and signatures. The session was highly appreciated by the delegates and offered many of them eye-opening ideas.

The session had a round of questions that were answered by the resource person.

#### Technical Session 4: Advances in the Digital and Cyber Forensic domain.

The fourth and final technical session was addressed by Dr. Meenakshi Mahajan, Deputy Director, Directorate of Forensics Services, Himachal Pradesh, India, who has a good track record of handling many interesting cases involving digital evidence in India. Ma'am, with her vast experience, started with her understanding and views of the use of digital evidences and could stress on the necessity to think of future challenges in this field. She also backed her argument using cases that had been handled by her.

The session had a rich mix of case studies, theories, legal provisions, and possible emerging challenges in the field. Ma'am could also demonstrate the need for relying on digital evidences by using the internet to share a glimpse of the impact and frequency of these crimes. She encouraged delegates who were

interested in the field to be aware of today's challenges and be prepared for tomorrow's problems.

The session had multiple questions being asked by the delegates, which were patiently answered by the resource person.

### Oral and poster presentations

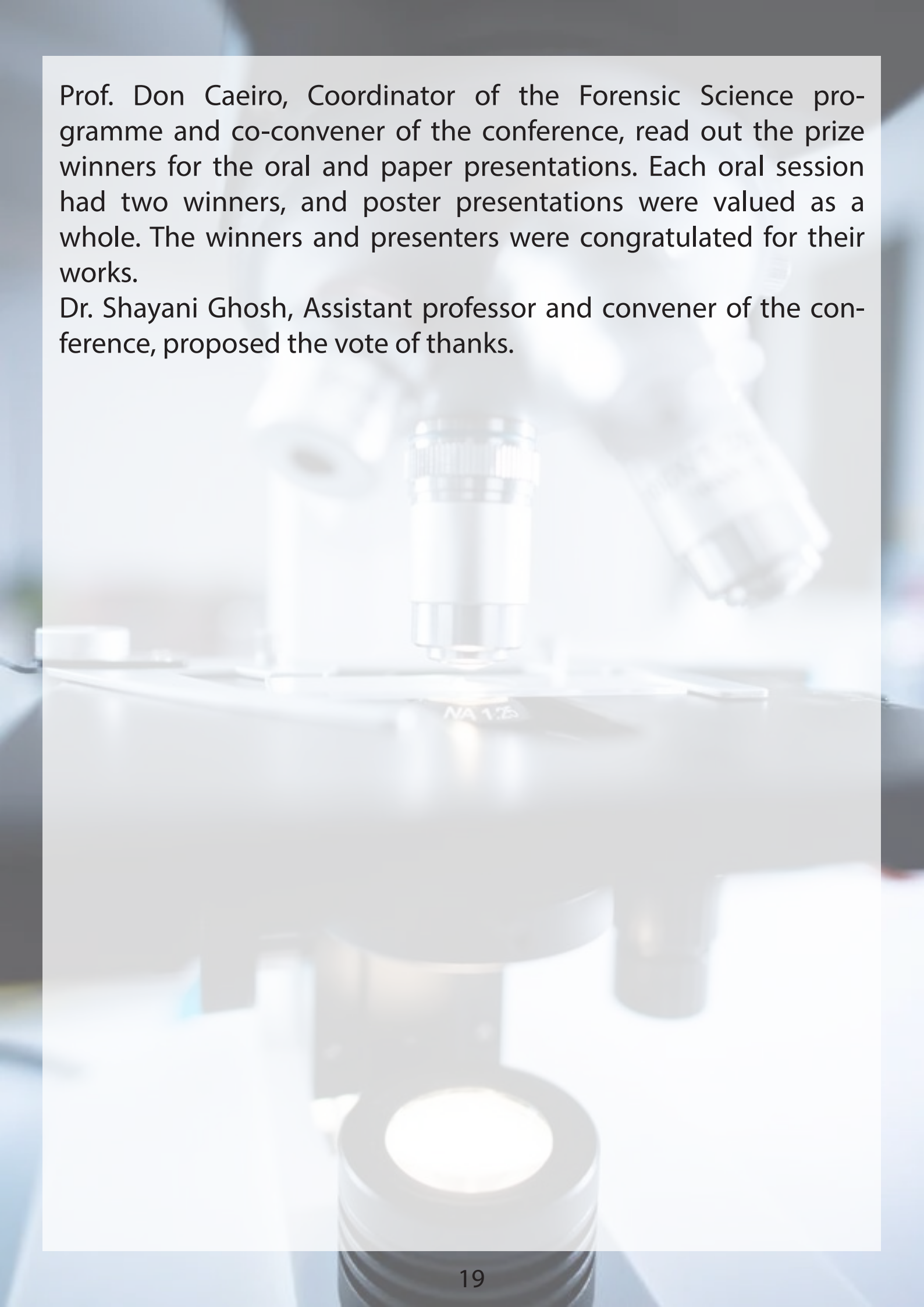
There were presentations by delegates pertaining to the fields of Forensic Biology, Forensic Chemistry and Toxicology, Forensic Chemical and Biological Sciences, Forensic Physical Sciences, and Digital Forensics. A total of 4 oral paper presentation sessions with 23 individual presentations were held. Each of them had interesting insights and new ideas, which sparked interest in delegates. The panelists reviewed and provided valuable insights to the researchers to further the field of interest.

Poster presentations happened in two different sessions with a total of 21 presentations. The posters were creatively designed, and very profound facts and findings were shared during these sessions. The panelists were highly appreciative of the posters and the quality of the findings.

### Valediction ceremony

The valedictory ceremony happened at the end of the conference on the evening of 6th May 2022. Dr. Meenakshi Mahajan, Deputy Director, Directorate of Forensics Services, Himachal Pradesh, India, was the chief guest for the session and credited the delegates for their presence and attention during the conference. She praised and motivated the presenters for their research and encouraged them to get better in the field. She had words of motivation for students who attended the conference and welcomed them for more such sessions.

Dr. Calistus Jude A L, Dean, Faculty of Science, Kristu Jayanti College, thanked the resource persons and panelists for their time and expertise they shared during the conference.



Prof. Don Caeiro, Coordinator of the Forensic Science programme and co-convener of the conference, read out the prize winners for the oral and paper presentations. Each oral session had two winners, and poster presentations were valued as a whole. The winners and presenters were congratulated for their works.

Dr. Shayani Ghosh, Assistant professor and convener of the conference, proposed the vote of thanks.



# INQUISITOR - INTER-COLLEGIATE FORENSIC SCIENCE FEST

The Forensic Science Club, Department of Forensic Science, organized Inquisitor 2022, the first inter-collegiate forensic fest for the undergraduate students of forensic science in other colleges based in India. This forensic fest aimed at discovering students' knowledge and understanding of the subject as it offered a wide array of science-related events.

The event was organized by the student coordinators of the Forensic Science Club at Kristu Jayanti College, Bangalore. The B.Sc. Forensic Science students at Kristu Jayanti College formed the working group and were the event and team organisers. The participants included the Forensic Science students from 5 different institutes across India.

The fest was executed with a total of 8 events and was organized at the best of quality. The fest was conducted online due to the pandemic situation using the Zoom platform. The high-spirited forensic fest started with preliminary rounds of various events on 4th April 2021.

The participants were given participant codes to ensure fairness; none of the internal students participated, and the event was open only for external participants.

8 events were organized which included - Crime Travel (Case study), Crimetoonist (Sketching), Hidden in Plain Sight (Observation test), Canvas (Poster), Trial by Trivia (Forensic Quiz), Tug of Words (Debate), Think Detective (Puzzle solving), and Sherlock Holmes (Personality contest).

The inaugural ceremony of the fest was presided over by Fr. Joshy Mathew, member of Management, Director library, and

coordinator of Dept of English at Kristu Jayanti College, Bangalore, and the guest of honour was Dr. Rakesh Gupta, Joint Director, Forensic Science laboratory, Chhattisgarh. In his presidential address, Father enlightened about the importance of Forensic Science and its scope in everyday life. Dr. Rakesh Gupta spoke about the existing avenues in Forensic Science and the future scopes. He encouraged students to take up newer domains and fields which are coming up in the field. He exhorted the faculty members to take up newer topics and help the students evolve into newer and brighter minds.

In the valedictory ceremony, Dr. Calistus Jude, Dean, Faculty of Science, Kristu Jayanti College, felicitated the winners of various events and appreciated the Forensic Science Club coordinators for having conducted the forensic fest successfully.

A total of 81 participants actively participated in the fest from the following 5 different institutes.

1. Government Institute of Forensic Science, Nagpur
2. School of Social Work (Autonomous)
3. SGT University
4. SMS College of Arts and Science
5. Garden City University, Bangalore

The participants from the Government Institute of Forensic Science, Nagpur, were declared the overall winners of the fest. Participants of the other institutes too won a good share of prizes during the fest.

The feedback for the fest was overwhelmingly positive, and students could upskill themselves through the different events that were organized.

# CAREER ORIENTATION SESSION ON CYBER FORENSICS AND CYBER SECURITY

A guest lecture on the topic “Careers in Forensic Science (Cyber Forensics and Cyber Security)” was conducted on 5th February 2022, at 9 AM by the Department of Forensic Science, Kristu Jayanti College. Mr. Kishalay Masanta, Cyber Security Consultant Quantum Security Services Wellington, New Zealand, was the resource person for the session. It was conducted over the Zoom platform and had over 240 participants. The session started off by seeking the blessings of God. Dr. Shayani Ghosh, Assistant Professor, Unit of Forensic Science, welcomed the resource person, faculty members, and the students. Mr. Arvind T., Professor, Unit of Forensic Science, introduced the resource person who had completed his Bachelor’s degree in Jain University, Bangalore, in B.Sc Forensic Science and Masters degree in Information Security and Digital Forensics in the Auckland University of Technology, New Zealand. The session was then taken over by the resource person, who talked about the following to the audience:

- What is Cyber Security and Digital Forensics?
- The importance of Cyber Security and Forensics
- Why should you have a career in Cyber Security and Forensics?
- Some of the Best Universities offering a master’s degree in Cyber Security and similar fields
- Career paths in Cyber Security and Digital Forensics
- The skills required to be chosen by different companies and the technical skills needed for being a professional in Cyber Security and Digital Forensics field

- The free resources provided by different institutions to increase your knowledge in different areas of Cyber Security and Forensics
- Qualifications and certifications to prove your skills
- Lastly, the journey of the resource person in the field of Cyber Security

After the session, it was time for the participants to raise their queries. The discussion was very interactive, and a lot of participants came forward with their doubts. The vote of thanks was given by Ms. Geethu Suresh, Professor, Unit of Forensic Science. The ending comments were shared by Mr. Don Caeiro, Assistant Professor, Unit of Forensic Science. The session was highly informative, and the participants got to know more about Cyber Security and Cyber Forensics.

# ATRIUM - INTRA-COLLEGIATE FORENSIC SCIENCE FEST

The Forensic Science Club, Unit of Forensic Science, organized Atrium 2022, an intra-collegiate forensic fest for the first and second-year undergraduate students of Forensic Science. This forensic fest aimed at discovering students' knowledge and understanding of the subject as it offered a wide range of science-related events.

The event was organized by the student coordinators of the Forensic Science Club at Kristu Jayanti College, Bangalore. The final year students formed the working group and were the event and team organisers. The participants included the first and second-year Forensic Science students.

Some of the events included were Crucipher (Crossword), Crime Travel (Case study presentation), Internal Affairs (Just A Minute), and Think Detective (Online Treasure hunt). The event named Sherlock Holmes took the participants through a series of investigative rounds.

The fest was executed with a total of 15 events and was organized at its best of quality. The fest was conducted online due to the pandemic situation using the Zoom platform. The high-spirited forensic fest started with preliminary rounds of various events on 7th February 2021.

12 teams formed by the students participated in good spirit, and the preliminary rounds and final rounds had very interesting themes and games. Team names included Sokovia, Lamentis, Vormir, Asgard, Wakanda, Ragnarok, Midgard, Kree, Titan, Sanctum, Xandar, and Quantum.

15 events were organized which included - Crucipher (Crossword), Crime Travel (Case study), Aftermath (Documentary), Crimetoonist (Sketching), Hidden in Plain Sight (Observation test), Canvas (Poster), Hostage (Roleplay), Total Recall (Report writing), Internal Affairs (Just a Minute), Oh Snap (Photography), Once Upon a Crime (Crime fiction writing), Trial by Trivia (Forensic Quiz), Tug of Words (Debate), Think Detective (Puzzle solving), and Sherlock Holmes (Personality contest).

The inaugural ceremony of the fest was presided over by Fr. Augustine George, Principal, Kristu Jayanti College, and the guest of honour was Ms. Maalini Ramalo, Director for Social Protection, Development of Human Resources for Rural Areas (DHRRA), Malaysia. In his presidential address, Father enlightened about the importance of Forensic Science and its scope in everyday life. Ms. Maalini spoke about her role in the domain of social protection and how the knowledge of forensic science helps her carry out day-to-day roles. She encouraged students to keep upskilling and following their dreams and motivated them to use opportunities provided during such fests to empower themselves.

In the valedictory ceremony, Dr. Calistus Jude, Dean, Faculty of Science, Kristu Jayanti College, felicitated the winners of various events and appreciated the Forensic Science Club coordinators for having conducted the forensic fest successfully.

# GUEST LECTURE ON PRACTICAL APPROACHES TO QUESTIONED DOCUMENT EXAMINATION

A guest lecture on the topic “Practical Approaches to Questioned Document Examination” was conducted on 19th February 2022 at 9:30 AM by the Department of Forensic Science, Kristu Jayanti College. Mr. Sharwan Kumar, Case reporting officer, Central Forensic Science Laboratory, Chandigarh, was the resource person for the session. The program was conducted over the Zoom platform for the students pursuing B.Sc. Forensic Science programme at Kristu Jayanti College. The guest lecture commenced at 9:30 AM, and there were about 138 participants who actively took part in the meeting.

Questioned document examination is a major forensic discipline that involves the forensic examination of document writings, signatures, handwriting, printed documents, security documents, and many more to identify instances of fraud and cheating. Exemplars are used to compare questioned writing, and the questioned document expert is able to distinguish between genuine writing, forgery, simulated forgery, tracing, manipulated handwriting, etc. It is a field that relies on the skill of the forensic examiner, and students had a good opportunity to understand questioned document examination from a trained expert using different case experiences during the guest lecture.

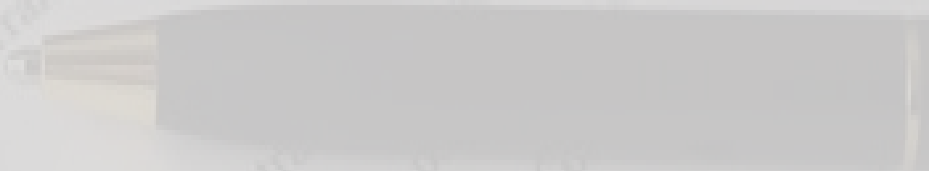
The resource person shared his knowledge in the examination of questioned documents and the practical approaches in this field. He also covered various topics related to questioned document examination, including:

- What is a document?

- Different types of forgery
- Forged signature with case study and specimen
- Alterations, erasures/abrasions in documents with case studies
- Different techniques used for the examination of forged documents
- Examination of digital and typewritten documents
- The application of forensic linguists to solve the cases

During the question & answer session, students raised their doubts related to the examination of documents.

The entire session was innovative and helped the students to learn more about the practical approaches to the examination of questioned documents.





# IN-HOUSE CAREER ORIENTATION SESSION

A career orientation session on “Career and prospects in Forensic Science” was organized for the second and third-year B.Sc. Forensic Science students on 24.02.2022 from 09:00 AM to 12:00 PM through the Zoom platform. The resource persons were:

1. Mr. Don Caeiro, Assistant Professor and Programme Coordinator, Forensic Science Programme, Kristu Jayanti College, Bangalore
2. Mr. Jeremiah Justus. M, Assistant Professor, Kristu Jayanti College, Bangalore
3. Ms. Chetna Tidke, Assistant Professor, Kristu Jayanti College, Bangalore
4. Dr. Shayani Ghosh, Assistant Professor, Kristu Jayanti College, Bangalore

The session was initiated by Mr. Don Caeiro, Assistant Professor, Forensic Science, at Kristu Jayanti College (Autonomous), Bengaluru. The session was focused on making decisions about higher education after earning a Bachelor’s degree in the field of forensics. The importance of drafting a plan, making accurate inquiries about one’s university/institute of choice, and how to filter out the right course of our interest by researching about the universities and the schemes that are promised by the same was the highlight of the session. Mr. Don Caeiro not only restricted his knowledge to Indian institutions but also gave a brief idea about the various courses offered in the line of forensics at universities overseas. Keeping in mind that the field of Forensic Science is newly established in many educational institutions,

Mr. Don Caeiro pointed out the categories of universities based on rankings, affiliations, reputations, and mainly, the financial needs of a student meeting the choice of program for Masters.

The second session was taken up by Mr. Jeremiah Justus. M, Assistant Professor, Forensic Science, at Kristu Jayanti College (Autonomous), Bengaluru. The session was about the different roles and designations that one could take up in the field of forensic science. Opportunities promised in public as well as private sectors were brought into the picture. Many public agencies like CBI (Central Bureau of Investigation), IB (Intelligence Bureau), Anti-doping officials, etc., were mentioned. A statistical overview of job distribution over the years was presented in order to have a better understanding of the advancement in this branch. Sir provided a reference for doing our own search for job opportunities and learning the various rules that are a mandate for any career aspirant. Mr. Jeremiah plotted a road map that showed the steps that we can take to ensure a systematic study about the objectives we need in attaining efficiency in the path of establishing a professional career - To be an early planner, invoking the spirit of competitiveness, applying in multiple firms, etc.

Ms. Chetna Tidke initiated the third session by briefing the participants about the different All India Level examinations that are conducted pertaining to forensic science. Eligibility criteria were discussed, the qualifying percentage and interview round for various exams were mentioned, and the possibility of being recruited in the Central and State Forensic Science Laboratories as a Forensic Professional were discussed. The question paper pattern and syllabus covered in each section of the paper for the comprehensive aptitude tests of postgraduate students were brought up. The paper pattern discussed was:

- Section A: 50 questions
- Section B: 70 questions
- Type of questions: Objective and one marker
- Duration of exam: 2 hours

Ma'am also threw light on the eligibility criteria for postgraduates for FACT (Forensic Aptitude and Caliber Test)/ FACT Plus/ NET (National Eligibility Test)/GATE (Graduate Aptitude Test in Engineering)/GPAT (Graduate Pharmacy Aptitude Test).

The final session handled by Dr. Shayani Ghosh mainly focussed on how to get enrolled in Ph.D. and what are the advantages, qualifying criteria, the current syllabus, and paper pattern, and how to prepare for the same. Attaining a doctorate in the field that one specializes in determines the eligibility for an Assistant Professorship, Junior Research Fellowship, or both. Qualifying criteria for both general and reserved category according to the UGC (University Grants Commission) was put to light by Dr. Shayani. The current paper pattern, as discussed by ma'am, is as follows:

- Paper 1: 50 questions (general paper)
- Paper 2: 100 questions (related to the core subject)
- Duration: 3 hours
- Qualifying marks: General category - 40% and Reserved category - 35%

Preparation for the test can begin during the first semester of the M.Sc. A student can appear for the exam during the third semester of the master's program. Ma'am also mentioned the advantages of qualifying NET and JRF in the career path of a student. Dr. Shayani was kind enough to give us insights into the various institutions (public and private) that promised a Ph.D. program in their curriculum.

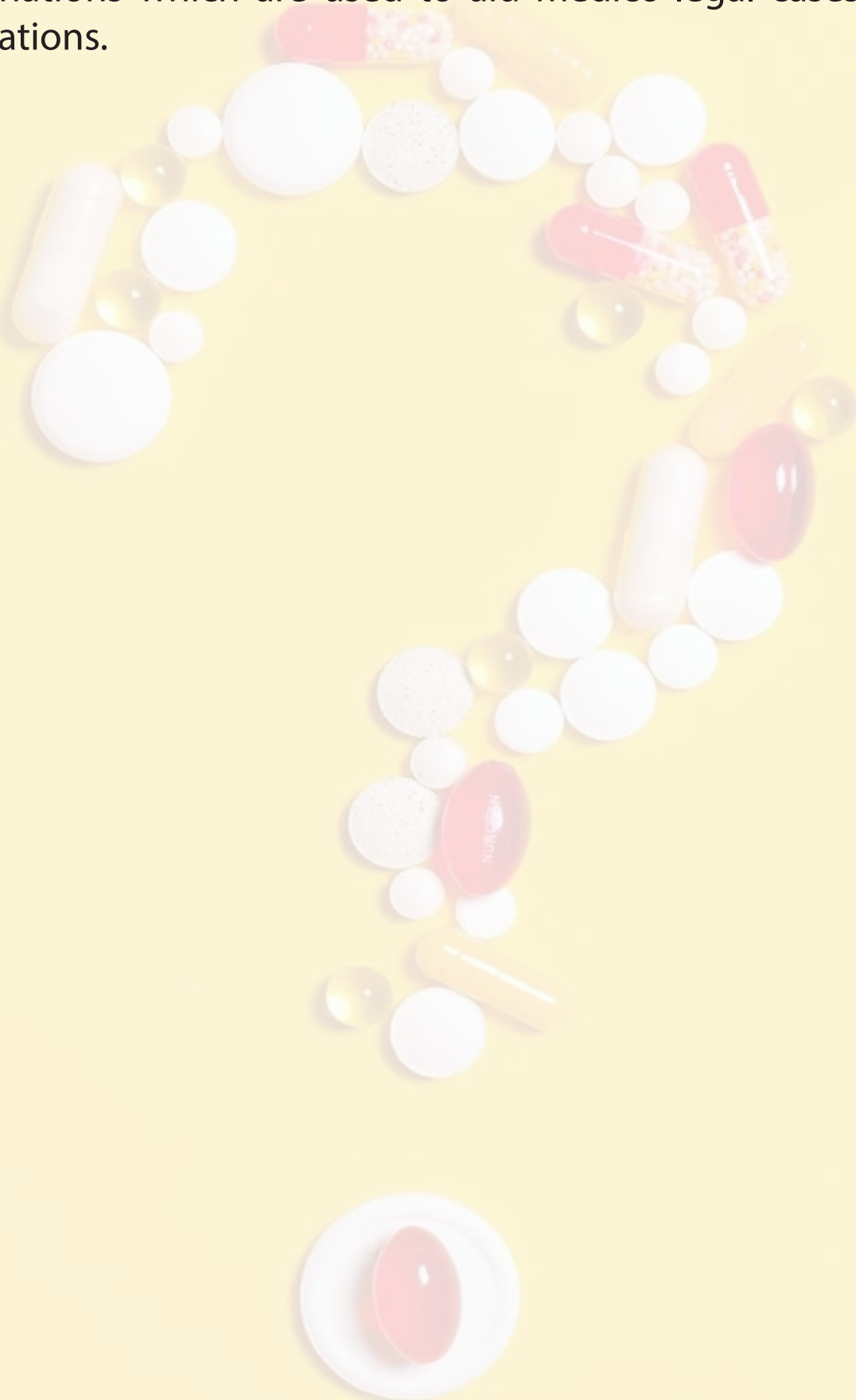
# GUEST LECTURE ON THE ROLE OF FORENSIC MEDICINE IN CRIME INVESTIGATION

A guest lecture on the topic "Role of Forensic Medicine in Crime Investigation" was conducted on 26th February 2022, at 9:30 AM by the Department of Forensic Science, Kristu Jayanti College. Dr. Hareesh S Gouda, Professor and Head, Department of Forensic Medicine, Father Muller Medical College, Mangalore, was the resource person for the session. The program was conducted over the Zoom platform for the students pursuing B.Sc. Forensic Science programme at Kristu Jayanti College. The guest lecture commenced at 9:30 AM, and there were about 127 participants who actively took part in the meeting.

The resource person is presently working as Professor and also serves as a Head of the Department of Forensic Medicine at Father Muller Medical College, Mangalore. He has 18 years of experience in teaching and handling medico-legal cases. Dr. Hareesh has published in numerous national and international journals. He has also authored and contributed chapters to textbooks of Forensic Medicine.

The resource person gave the students new knowledge about the workings of Forensic Medicine and how coroners with the knowledge of medicine and law help in various reaching conclusions in investigations. He also gave explanations about certain terminologies in Forensic Medicine. He spoke about the history of Forensic Medicine. Dr. Hareesh also explained the workings of Forensic Medicine by talking about various cases he has worked on. He gave a detailed explanation about different wounds, how they are caused, and how they help in concluding the case because of their nature.

The entire session was interesting and provided students an insight into Forensic Medicine, autopsy, and other pathological examinations which are used to aid medico-legal cases and investigations.



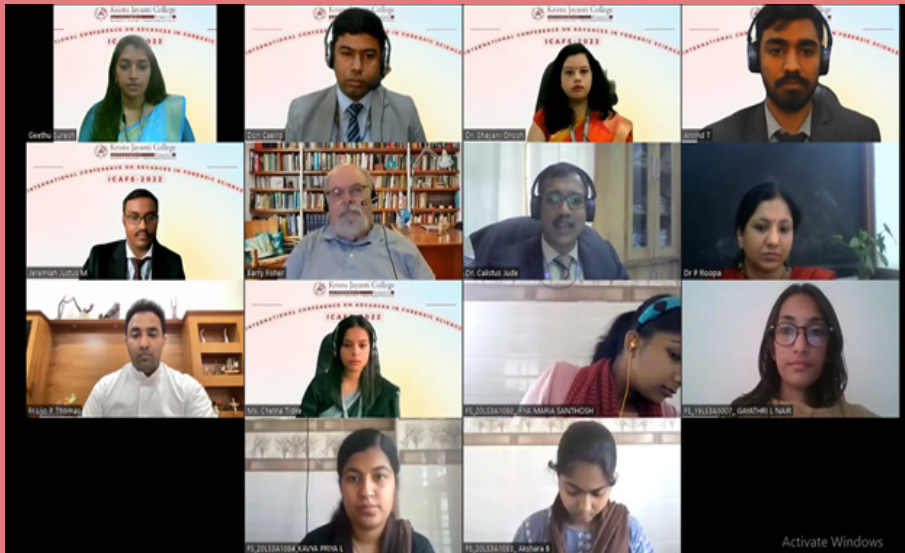
# GUEST LECTURE ON DISASTER VICTIM IDENTIFICATION

A guest lecture on the topic “Disaster Victim Identification” was conducted on 13th May 2022, at 3 PM in M3 Auditorium, Main Block, Kristu Jayanti College, Bangalore. The resource person for the session was Dr. Deepak V, Asst. Professor and Forensic Consultant, Forensic Odontology, M R Ambedkar Dental College & Hospital, Bangalore.

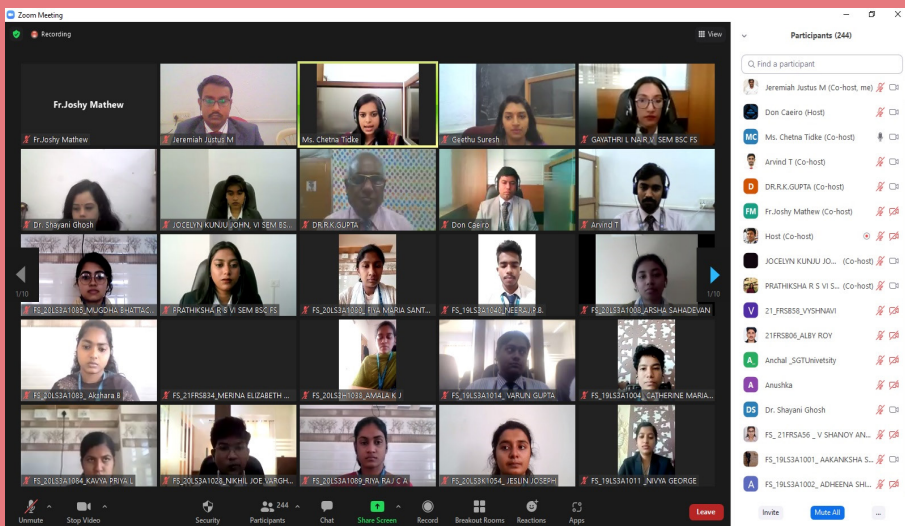
Disaster Victim Identification is not a crime-based scenario, but the techniques of forensic science are very much applied to this area. Anthropological analysis, DNA (Deoxyribonucleic acid) analysis, and odontological analysis are among the many approaches toward Disaster Victim Identification.

Dr. Deepak listed the many avenues where forensic expertise is required for Disaster Victim Identification. He explained the need for closure to the relatives and how this field of humanitarian forensics is a deed-based field that requires commitment and fulfilment. He motivated the students using case studies of the recent past and expressed that they must work hard to achieve their dreams in the field and promised better scenarios to emerge in the future.

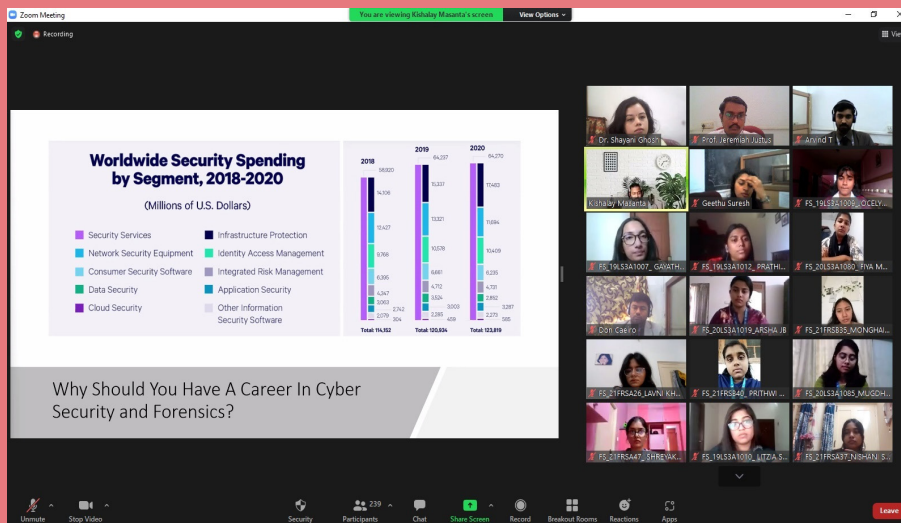
The session concluded with questions from the students, and the resource person patiently and clearly explained the doubts.



## International Conference on Advancement in Forensic Science



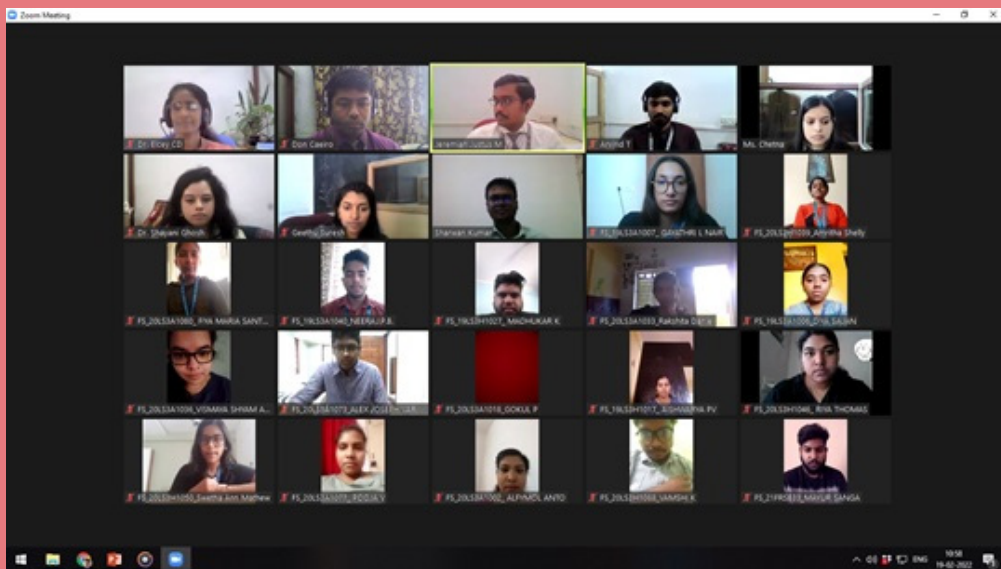
## A snapshot from Inquisitor



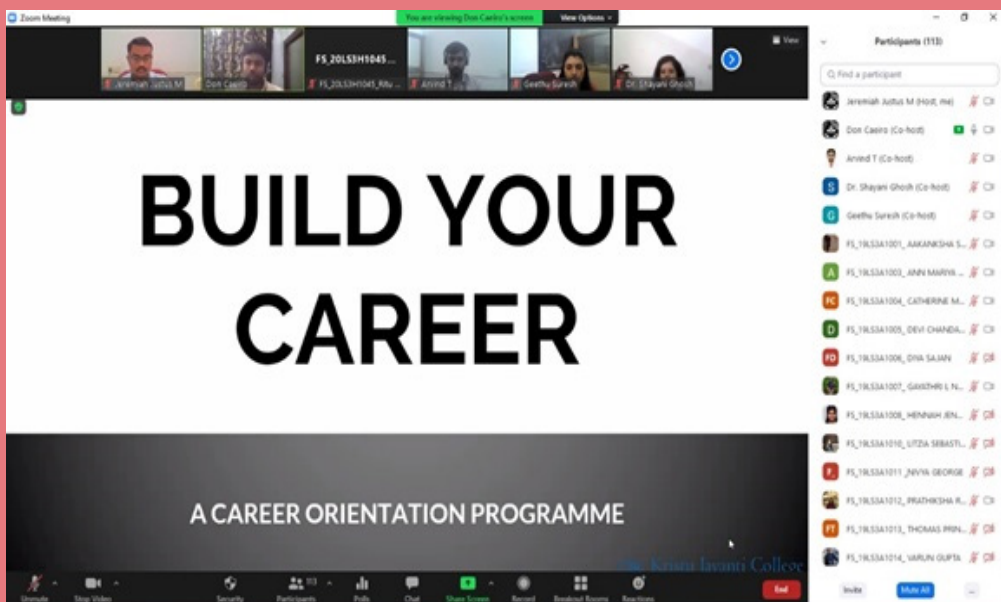
## A snapshot of Cyber Forensics Expert Lecture



A snapshot from Atrium

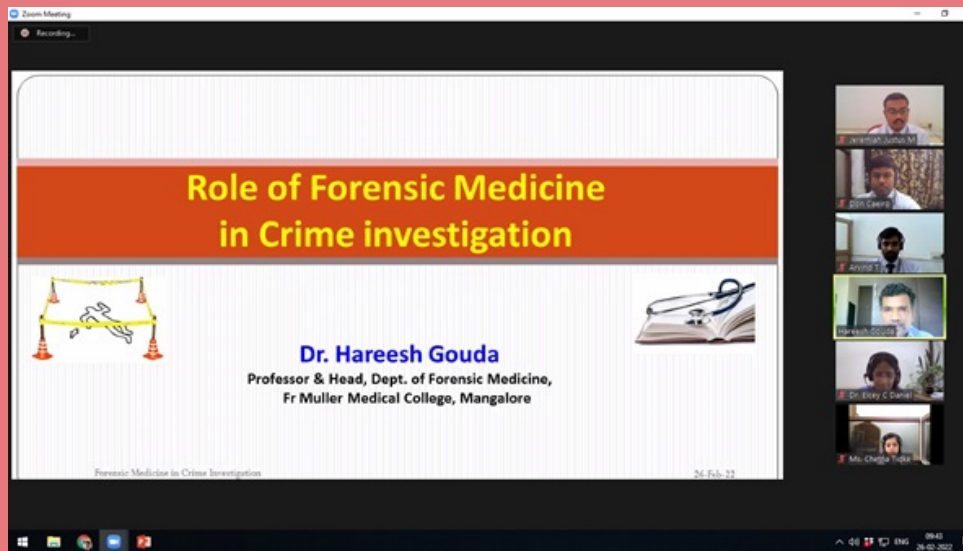


Guest Lecture on Questioned Document Examination



In-House Career Orientation Session





## Guest Lecture on Role of Forensic Medicine in Crime Investigations



## Guest Lecture on Disaster Victim Identification

# INDUSTRIAL VISITS



JSS Medical College, Mysore



Axxonet, Bangalore