

# Forensic Science



## **New for 2022 – 2023**

There will be NO verbal announcements during testing.

Editorial updates have been made for clarity.

The round two written conclusion will now be submitted digitally at ILC, and competitors must bring a laptop/tablet to type their responses into a digital form.

**CAUTION:** *The content and pictures in the suggested resources are graphic in nature and may be considered offensive by some. HOSA Advisors should seek administrative and parental approval before allowing HOSA members to participate in this event.*

- This event is intended for advanced level HOSA members who have already completed one or more courses in Medical Terminology and Anatomy & Physiology.

## **Event Summary**

Forensic Science provides HOSA members with the opportunity to work as a team to apply their knowledge and skills in creating a solution to a forensic science-related problem. This competitive event consists of 2 rounds and each team consists of 2 people. Round One is a written test and will evaluate the team's understanding of forensic science. The test score from Round One will be used to qualify the team for Round Two. In Round Two, teams will be given a case study to analyze that may include physical evidence and written information such as police reports and an autopsy. Teams will have six (6) minutes to view the "crime scene" and thirty (30) minutes to write their conclusions with supporting evidence. This event aims to inspire members to be proactive future health professionals and critically examine elements of a forensic case.

**Sponsorship** This competitive event is sponsored by [Anatomage](#)

*Anatomage*

## **Dress Code**

Competitors shall wear the HOSA uniform, proper business attire, medical scrubs, or polo and khakis. Bonus points will be awarded in both rounds for [proper dress](#). All team members must be properly dressed to receive bonus points.

## **Competitor Must Provide**

- [Photo ID](#)
- #2 lead pencils (NOT mechanical) with eraser
- Highlighters (optional)
- Electronic device on battery power containing a typing program of the competitor's choosing AND internet accessibility (1 or 2 devices allowed per team)

## General Rules

1. Competitors in this event must be active members of HOSA-Future Health Professionals in good standing.
2. **Eligible Divisions:** Secondary and Postsecondary/Collegiate divisions are eligible to compete in this event.
3. Competitors must be familiar with and adhere to the “[General Rules and Regulations of the HOSA Competitive Events Program \(GRR\)](#).”
  - Per the [GRRs #11](#) and [Appendix H](#), HOSA members may request accommodation in any competitive event. To learn the definition of an accommodation, please read [Appendix H](#). To request accommodation for the International Leadership Conference, [submit the request form here](#) by May 15 at midnight EST.
  - To request accommodation for any regional/state level conferences, please work with your local and state advisor directly. Accommodations must first be done at state in order to be considered for ILC.
4. Teams must be composed of two (2) members.
5. All competitors shall report to the site of the event at the time designated for each round of competition. At ILC, competitor’s [photo ID](#) must be presented prior to ALL competition rounds.

## Official References

6. Official references used in the development of the written test:
  - A. [Bertino, A., Bertino. P. \(Latest Ed\) Forensic Science Fundamentals. National Geographic Learning/South-Western Cengage Learning.](#)
  - B. [Bell, S. \(Latest Ed\). Forensic Science. Taylor & Francis Group/CRC Press.](#)
7. **Optional References:** Competitors should have a strong background in Medical Terminology, Anatomy and Physiology, and Pathophysiology in order to best respond to the round two case study. The following resources are recommended study material to assist competitors with these subjects. Round One test questions are NOT taken from these resources:
  - A. [Simmers, L., Simmers-Narker, Simmers-Kobelak. DHO: Health Science. Cengage Learning, Latest edition.](#)
  - B. [Ehrlich, Ann. Medical Terminology for Health Professions, Cengage Learning. Latest Edition.](#)
  - C. [Frazier. Essentials of Human Diseases and Conditions. Elsevier, Latest edition.](#)

## ROUND ONE: The Test

8. [Round One Test Instructions:](#) There will be a maximum of 60 minutes to complete the 50 item multiple-choice test.
  - A. All competitors shall report to the site of the event at the time designated for each round
  - B. The team test score average from Round One will be used to qualify the team for the Round Two case study.
  - C. Round I: Written Test Plan
    - Forensic History and Careers..... 10%
    - Crime Scene and Death Investigation..... 20%
    - Forensic Toxicology and Pharmacology..... 20%
    - Forensic Anthropology..... 10%
    - Forensic Entomology..... 10%
    - Identification of Blood, Bloodstains, Biological Fluids and Stains..... 10%
    - Techniques of DNA Analysis..... 10%
    - Forensic Psychology and Psychiatry ..... 10%

## 9. Sample Round One Test Questions

1. What is the term for a conscious and deliberate attempt to minimize or deny symptoms of a mental disorder? (Bell pp 318)
    - A. Deception
    - B. Malingering
    - C. Dissimulation**
    - D. Incompetence
  2. Where are blow fly eggs usually found on a dead body? (Bell pp 122)
    - A. Close to a wound or natural orifice**
    - B. Under any covering such as clothing, leaves, etc.
    - C. On the chest or in a hairy body area
    - D. Under the body close to the ground
  3. When a victim drowns in freshwater, what term describes the massive destruction of RBC's? (Bertino pp 500)
    - A. Pneumothorax
    - B. Asphyxia
    - C. Sickling of RBC's
    - D. Autolysis**
10. **Time Remaining Announcements:** There will be NO verbal announcements for time remaining during ILC testing. All ILC testing will be completed in the Testing Center and competitors are responsible for monitoring their own time.

## ROUND TWO: The Case Study

11. In Round Two, each team will be asked to solve the same case study. The case study is a secret problem that is not disclosed until the event begins. Professional ethics demand that competitors DO NOT discuss or reveal the secret topic until after the event has concluded. Competitors who violate this ethical standard will be penalized per [the GRRs](#).
  12. No pre-printed or recorded materials/notes may be brought to the competition. Competitors will be provided with index cards for taking notes. They may keep these index cards with them throughout the event. Teams have the option to bring one highlighter each to the competition.
  13. There will be two parts per section as follows:

Part #1	Case study analysis	6 minutes
Part #2	Written conclusion	30 minutes + 5 minutes for digital submission
- Multiple rooms or one large room (ballroom) with multiple stations may be used. If one large room is used, there will be tables and chairs for multiple teams. When possible, the room will be large enough so that competitors will be able to discuss and prepare their conclusion without being overheard by other teams. The exact set-up will vary by Chartered Association and at ILC. A holding room may be used. Please note it is possible that all competitors in Round 2 will view the case study at the same time and prepare their written conclusion at the same time.
14. *OPTIONAL:* If the case study does not involve a crime scene or physical evidence and instead is in a written format, then competitors will be directed to a room for developing their written conclusion, and will be given a total of 36 minutes.
  15. The timekeeper or designee will announce when teams have one (1) minute remaining in each of the two parts of Round Two.
  16. Competitors will use the evidence and information they gather in Part #1 in order to develop a written conclusion as follows:

Part #1:	This part of the event allows competitors to gather evidence/information about the
<b>Case Study</b>	death. There <u>may be</u> a written police report and/or other written information about the
<b>Analysis</b>	case. There <u>may be</u> physical evidence in the room for the competitors to visually

analyze, including but not limited to a manikin, bones, dental x-rays, photos, or other physical evidence. A digital tool, such as a table from Anatomage may also be an option used in this part of the event. There may also be a police officer, medical examiner and/or a witness in the room. Each team will see the same information/evidence, possibly at the same time, but will not be allowed to interact with anything they see or hear.

**Part #2**  
**Written**  
**Conclusion** Competitors will identify the time of death range, immediate cause of death, manner of death, other conditions contributing to cause of death, and evidence (pertinent observations and evidence) about the case that explains why teams came to the conclusions they reached.

17. One copy of the written information will be provided per team in Part #1, including the police report, autopsy, etc., if applicable. If provided, team members will be allowed to take notes on these documents and use them to help develop their written conclusion (Part #2).
18. For the Part #2 Written Conclusion, competitors will bring a laptop or tablet on battery power containing a typing program (Microsoft Word, Text, Google Docs, etc.) AND internet accessibility. One device per team is all that is needed, but EACH team member is allowed to bring a device so that one may be used as a backup in case of emergency.
19. Electricity is NOT provided and CANNOT be used. Electronic device must operate on battery power.
20. Wi-Fi internet access will be provided for competitors to access their typing program if needed (ie: Google Docs) AND to access the digital submission form for the Part #2 Written Conclusion (ie: Google Form/Wufoo Form, etc...). Competitors are only allowed on the selected website provided by HOSA. Competitors are NOT allowed to search the internet for content to help write their conclusion.
21. Competitors are responsible to ensure their laptop/tablet can connect to the provided Wi-Fi network as limited assistance will be provided by the Event Personnel during the event.
22. Competitors will type their written conclusion into the typing program of their choice (Microsoft Word, Text, Google Docs, etc.). At the end of thirty (30) minutes, competitors will then be given five (5) additional minutes to copy and paste the written conclusion from their typing program into the digital submission form. The digital submission form will be provided to competitors by event management and may be a Google /Wufoo or similar form, etc. The digital submission form will align to the Written Conclusion form on page 5 of these guidelines.
23. **Time Remaining Announcements:** There will be an announcement when 15 minutes and 5 minutes remain of the 30-minute written conclusion portion of the event. The final five (5) minutes of the event should be used to copy/paste the written conclusions into the digital submission form; there will be no additional time remaining announcements. The timekeeper will stop teams once five (5) minutes have passed and teams will be excused.
24. The judges will have five (5) minutes to evaluate the written conclusion and complete the rating sheets.

### **Final Scoring**

25. The team test score average will then be added to the written conclusion score to determine final results.
26. In case of a tie, the highest averaged test score will be used to determine the rank.



## FORENSIC SCIENCE ROUND TWO – JUDGE’S RATING SHEET

Section # \_\_\_\_\_  
Team # \_\_\_\_\_

Judge’s Signature \_\_\_\_\_  
Division: SS \_\_\_\_\_ PSC \_\_\_\_\_

Items Evaluated	Excellent 10 points	Good 8 points	Average 6 points	Fair 4 points	Poor 0 points	JUDGE SCORE
1. Time of Death Range	Indicates the date and approximate time of death correctly.	N/A	Indicates a close approximation of the correct date and time of death.	N/A	Date or time is not close to the actual date or time of death or is missing altogether.	
2. Immediate Cause of Death	Accurately identifies the medical cause of death.	N/A	A partial identification of the medical cause of death is included.	N/A	The response does not reflect an accurate cause of death.	
3. Manner of Death: - Natural - Accident - Suicide - Homicide - Undetermined	Accurately identifies the manner of death as one of the five listed.	N/A	N/A	N/A	Does not accurately identify the-manner of death as one of the five listed.	
4. Other Conditions, as applicable	Team includes most specific and relevant factors contributing to the death but not considered the immediate cause.	N/A	Team includes only some of the relevant factors contributing to the death but not considered the immediate cause.	N/A	Team is not able to identify contributing factors to the death.	
5. EVIDENCE - Connects Evidence to Conclusions	Writing includes numerous pieces of evidence that completely supports the conclusions with logical details, facts, or examples.	N/A	Writing includes some pieces of evidence that partially supports the conclusions.	N/A	Writing does not include any pieces of evidence to support the conclusions.	
6. EVIDENCE - Application of Knowledge	Team draws numerous accurate conclusions using their knowledge of human anatomy and physiology and forensic science	N/A	Team draws several accurate conclusions using their knowledge of human anatomy and physiology and forensic science	N/A	Team draws very few accurate conclusions using their knowledge of human anatomy and physiology and forensic science	
7. EVIDENCE - Concise, clear and logical	Physical evidence of this case was explained in a clear, concise and logical manner.	Physical evidence was explained in a way that was mostly clear, concise and logical.	The evidence was explained moderately clear, concise, and logically.	Some of the evidence was explained in a clear and logical manner.	The evidence was not explained in a clear or concise manner and information was not logical.	
Items Evaluated	Excellent 5 points	Good 4 points	Average 3 points	Fair 2 points	Poor 0 points	JUDGE SCORE
8. Neatness and Spelling	Remarks are written neatly and spelled correctly.	Most of the remarks are written neatly and spelled correctly.	Some of the remarks were written neatly and spelled correctly.	The remarks have several errors and spelling errors.	Work appears to be sloppy and many words are spelled incorrectly.	
9. Grammar and Mechanics	Errors in grammar, spelling, punctuation, and capitalization are minimal and not distracting. (0-1 errors).	Minimal errors are found (1-2 errors). They do not detract from the general flow of the written conclusion.	2-3 errors were found, and they detract from the overall flow of the written conclusion.	There are 3-4 errors which detract from the overall meaning and flow of the written conclusion.	More than five errors are found. Errors are glaring, and the written conclusion is difficult to read.	
<b>Total Points (80):</b>						