



Last updated: September 26th, 2023

Forensic Science

PLEASE NOTE THE FOLLOWING DIFFERENCES IN HOW THIS EVENT WILL BE RUN AT HOSA CANADA'S FALL LEADERSHIP CONFERENCE (FLC):

1. Written test time shortened to 40 minutes (still 50 questions) at FLC only.
2. Written test will take place online and be open book at FLC only.
3. Only the written test portion of the event will be evaluated at FLC.

PLEASE NOTE HOSA CANADA'S SPRING LEADERSHIP CONFERENCE (SLC) WILL BE IN-PERSON AND THIS EVENT WILL BE RUN ACCORDING TO THE GUIDELINES IN THE FOLLOWING PAGES, EXCEPT FOR THE FOLLOWING DIFFERENCE:

1. There will be a verbal announcement when there are 30 minutes and 5 minutes remaining to complete the written test at SLC.
**Please note that NO verbal announcements will be made at the International Leadership Conference (ILC).*

Forensic Science



New for 2023 – 2024



Competitors are encouraged to bring personal devices so firewalls on school issued devices do not create barriers for competitors. Clarification about the submission process has been added.

These guidelines are written for ILC. States may modify events or have different event processes and deadlines. Be sure to check with your Local/State Advisor (or state website) to determine how the event is implemented for the regional/area or state conference.

Editorial updates have been made.

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 for both rounds
- Highlighters (optional)
- Personal Electronic device on battery power containing a typing program of the competitor's choosing AND internet accessibility (1 or 2 devices allowed per team, school device not recommended)

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 \(GRR\)](#).”
 - A. Per the [GRRs](#) 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.
 - B. To request accommodation for any regional/area or state level conferences, submit the request form [here](#) by your state published deadline. 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:
7. [Bertino, A., Bertino. P. \(Latest Ed\) Forensic Science Fundamentals. National Geographic Learning/South-Western Cengage Learning.](#)
8. [Bell, S. \(Latest Ed\). Forensic Science. Taylor & Francis Group/CRC Press.](#)
9. 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:
10. [Simmers, L., Simmers-Narker, Simmers-Kobelak. DHO: Health Science. Cengage Learning, Latest edition.](#)
11. [Ehrlich, Ann. Medical Terminology for Health Professions, Cengage Learning. Latest Edition.](#)
12. [Frazier. Essentials of Human Diseases and Conditions. Elsevier, Latest edition.](#)

ROUND ONE: The Test

13. [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%

14. **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**

15. **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

16. 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](#).

17. 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 must bring pencils and have the option to bring one highlighter each to the competition.

18. 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 also 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.

19. **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.

20. Competitors will use the evidence and information they gather in order to develop a written conclusion as follows:

| | |
|----------------------------|--|
| Part #1: | This part of the event allows competitors to gather evidence/information about the death. There <u>may be</u> a written police report and/or other written information about the 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 |
| Case Study Analysis | |

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 witness(s) 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. Actors/personnel will not answer any questions.

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 (if applicable), and evidence (pertinent observations and facts) about the case that explains why teams came to the conclusions they reached.

21. 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). These will be returned to event personnel at the conclusion of this event.
22. A laptop or tablet will be brought to the event: (1-2 devices per team are allowed)
 - a. on battery power
 - b. containing a typing program (Microsoft Word, Text, Google Docs, etc.)
 - c. with internet accessibility
 - d. with a USB port
 - e. Competitors are encouraged to bring personal devices so firewalls on school issued devices do not create barriers for competitors.
23. Electricity is NOT provided and CANNOT be used. Electronic device must operate on battery power.
24. Teams will type their written conclusion into the typing program of their choice (Microsoft Word, Text, Google Docs, etc.) following the formatting in these guidelines below. Competitors should check with event staff prior to the event to determine if internet access will be provided to support an online typing program like Google Docs.

Submission Process:

25. At the end of thirty (30) minutes, competitors will then be given five (5) additional minutes to submit their written conclusion to event staff.
26. **Option A:** If internet access is provided to competitors:
 - a. Competitors will access their online typing program (i.e.: Google Docs)
 - b. Competitors will submit their written analysis via a digital online form, such as google forms or other online collection method determined by event staff
 - c. Competitors are only allowed on the selected website provided by HOSA. Competitors are NOT allowed to search the internet for content to help with their write-ups. The written analysis will be developed with evidence and ideas the competitors can speak to either from memory/personal experience and/or from facts provided in the secret topic. The internet will NOT be used to research data to support the written analysis development.
27. **Option B:** If internet access will NOT be provided to competitors:
 - a. Competitors will save their written conclusion on a USB drive provided by HOSA.
28. **Option C:** Other process determined and communicated by state or ILC event staff.
29. Check your state and ILC websites for the process that will be used.
30. **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. An additional five (5) minutes will then be awarded to submit their written conclusion; there will be no additional time remaining announcements. The timekeeper will stop teams once five (5) additional minutes have passed and teams will be excused. State and ILC event staff have the discretion to adjust this 5 minute time frame to account for the submission process used.

Final Scoring

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

FORENSIC SCIENCE

Written Conclusion

This form will be provided digitally to competitors at ILC.

Section# _____ Team # _____
 Division: SS _____ PSC _____

CASE STUDY OPINION

Time of Death Range: _____

Immediate Cause of Death: _____

Manner of Death: _____

Other Conditions contributing to the immediate cause of death, if applicable:

Evidence to support opinion:

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. | |
| Total Points (80): | | | | | | |