



## Forensic Science

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

1. Written test time shortened to 40 minutes (still 50 questions) for both FLC and SLC.
2. Written test will take place online and be open book for both FLC and SLC.
3. Only the written test will be evaluated at FLC.
4. The Round Two case study at SLC may be virtual, in-person, or hybrid. For more info on whether you are expected to participate in-person or line, please visit our website.
  - a. \*If students participate over Zoom, they must have their cameras on for the entire duration of the event and show the judges their surroundings to help us minimize cheating as much as possible.\*
  - b. \*No electronic, printed or recorded materials may be brought to the competition, either in-person or online. Competitors will be provided with paper for taking notes. They may keep these papers with them throughout the event. Please note, teams competing over Zoom are expected to bring their own scrap paper. They must be ready to show this to the judges at the beginning of the event.\*

# Forensic Science

## ***New for 2021-2022***

*DHO Health Science* 9<sup>th</sup> edition by Simmers has been released.  
*Medical Terminology* 8<sup>th</sup> edition for the Health Professions by Ehrlich has been released.  
*Essentials of Human Disease & Conditions* 7<sup>th</sup> edition by Frazier has been released.  
The rating sheet has been updated.

**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](#)

**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.

### **General Rules**

1. Competitors in this event must be active members of HOSA-Future Health Professionals in good standing in the division in which they are registered to compete (Secondary or Postsecondary/Collegiate).
2. Competitors must be familiar with and adhere to the ["General Rules and Regulations of the HOSA Competitive Events Program \(GRR\)."](#)
3. Teams must be composed of two (2) members.
4. 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**

5. The following official references are used in the development of the written test.

- [Bertino, A., Bertino. P. \(Latest Ed\) Forensic Science Fundamentals. National Geographic Learning/South-Western Cengage Learning.](#)
  - [Bell, S. \(Latest Ed\). Forensic Science. Taylor & Francis Group/CRC Press.](#)
6. **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:
- [Simmers, L., Simmers-Narker, Simmers-Kobelak. DHO: Health Science. Cengage Learning, Latest edition.](#)
  - [Ehrlich, Ann. Medical Terminology for Health Professions, Cengage Learning, Latest Edition.](#)
  - [Frazier. Essentials of Human Diseases and Conditions. Elsevier, Latest edition.](#)

## ROUND ONE: The Test

7. **Test Instructions:** The competitors will be given instructions and will be notified to start the test. There will be a maximum of 60 minutes to complete the 50 item multiple-choice test.

NOTE: *Chartered associations may use a different process for testing, to include but not limited to pre-conference testing, online testing, and testing at a computer. Check with your Chartered Association for the process you will be using.*

- 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%

## 8. 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?
    - A. Deception
    - B. Malingering
    - C. Dissimulation**
    - D. Incompetence
- Bell Page 318

2. Where are blow fly eggs usually found on a dead body?
  - 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
 Bell Page 122
  
3. When a victim drowns in freshwater, what term describes the massive destruction of RBC's?
  - A. Pneumothorax
  - B. Asphyxia
  - C. Sickling of RBC's
  - D. **Autolysis**
 Bertino Page 390

9. **Time Remaining Announcements:** There will be a verbal announcement when there are 30 minutes, 15 minutes, 5 minutes, and 1 minute remaining to complete the test.

**ROUND TWO: The Case Study**

10. 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](#).
11. No electronic, printed or recorded materials 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.
12. There will be two parts per section as follows:
 

Part #1	Case study analysis	6 minutes
Part #2	Written conclusion	30 minutes

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. 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.

13. *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.
14. The timekeeper or designee will announce when teams have one (1) minute remaining in each of the two parts of Round Two.
15. 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
<b>Case Study</b>	evidence/information about the death. There <u>may be</u> a written
<b>Analysis</b>	police report and/or other written information about the case. There

may be 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. 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.

16. 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).
17. The judges will have five (5) minutes to evaluate the written conclusion and complete the rating sheets.
18. The team test score average will then be added to the written conclusion score to determine final results.
19. In case of a tie, the highest averaged test score will be used to determine the rank.

**Final Scoring**

**Competitor Must Provide**

- #2 lead pencils with eraser
- [Photo ID](#)
- Watch with second hand (optional - Round Two only)
- Highlighters (optional)

**FORENSIC SCIENCE**  
**Written Conclusion**

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:**

\_\_\_\_\_  
\_\_\_\_\_

**Evidence to support opinion:**

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

Section # \_\_\_\_\_ Judge’s Signature \_\_\_\_\_  
 Team # \_\_\_\_\_ 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.	
<b>5. EVIDENCE - Connects Evidence to Conclusions</b>	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.	
<b>6. EVIDENCE - Application of Knowledge</b>	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	
<b>7. EVIDENCE - Concise, clear and logical.</b>	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>						