

# Forensic Science

## ***New for 2019-2020***

Competitors will not be required to show event guidelines at ILC. Time remaining announcements have been added to the test. The sample case study has been removed and posted on the Competitive Events [Useful Tools](#) page. Additional optional resources for Round Two have been added. The sample room set has been relocated to the [CE Management Webpage](#) on the HOSA website. Scholarship information has been added to the guidelines.

**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.

- Purpose** To encourage HOSA members to analyze careers in forensic science and to work as a team to apply their knowledge and skills in creating a solution to a forensic science-related problem.
- Description** This event will involve two rounds of competition. Round One will consist of a written test to evaluate the team's understanding of forensic science. Written test will measure knowledge and understanding at the recall, application or analysis levels. Higher-order thinking skills will be incorporated as appropriate. The test score from Round One will be used to qualify the team for Round Two, and will be used as part of the final score. The top scoring teams will advance to Round Two and will be given a case study related to forensic science. Teams will have six (6) minutes to analyze a case study, which will include written information and may include physical evidence. Finally, teams will be given thirty (30) minutes to write their conclusions with supporting evidence.
- 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.
- Rules and Procedures**
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. [Round One 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 test. Competitors should leave the testing site promptly after submitting all testing materials and evaluations.
    - a. All competitors shall report to the site of the event orientation at the time designated. The Round One test will immediately follow the orientation. **No proxies will be**

**allowed for the orientation.** At ILC, [photo ID](#) must be presented prior to competing in each round.

- b. The team test score average from Round One will be used to qualify the team for the Round Two case study. The team test score average will then be added to the written conclusion score to determine final results.
- 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%

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.](#)

NOTE: States/regions may use a different process for testing, to include but not limited to pre-conference testing, online testing, and testing at a computer. with your Area/Region/State for the process you will be using.

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.](#)

7. **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.

8. 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](#).

9. 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.

10. 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 state 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.

11. *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.
12. The timekeeper or designee will announce when teams have one (1) minute remaining in each of the two parts of Round Two.
13. Competitors will use the evidence and information they gather in Part #1 in order to develop a written conclusion as follows:

**Part #1:**  
**Case Study Analysis**

This part of the event allows competitors to gather evidence/information about the death. There may be a written police report and/or other written information about the case. There may be physical evidence in the room for the competitors to 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.

14. 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).
15. In case of a tie, the highest averaged test score will be used to determine the rank.
16. HOSA offers numerous scholarships every year to its members interested in pursuing a variety of health careers. As you consider participating in this competitive event, please keep in mind there may be a HOSA Scholarship offered that fits your interests! For more information on the HOSA Scholarship program, please visit <http://www.hosa.org/scholarships>.

**Competitor Must Provide**

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

**FOR SPECIFICS ON EVENT MANAGEMENT SEE [MANAGING COMPETITIVE EVENTS](#)****Required Personnel**

- One Event Manager
- One Judge Manager (JM) to provide quality assurance for the event by ensuring that the guidelines are followed and all event documents are complete.
- One Section Leader per section
- One - three judges per section (preferably with experience in forensics)
- One-two event assistants per section
- One time-keeper per section in written conclusion room, and one for case study scene as applicable
- Witness, victim(s) or other actors for case study (as required per scenario)

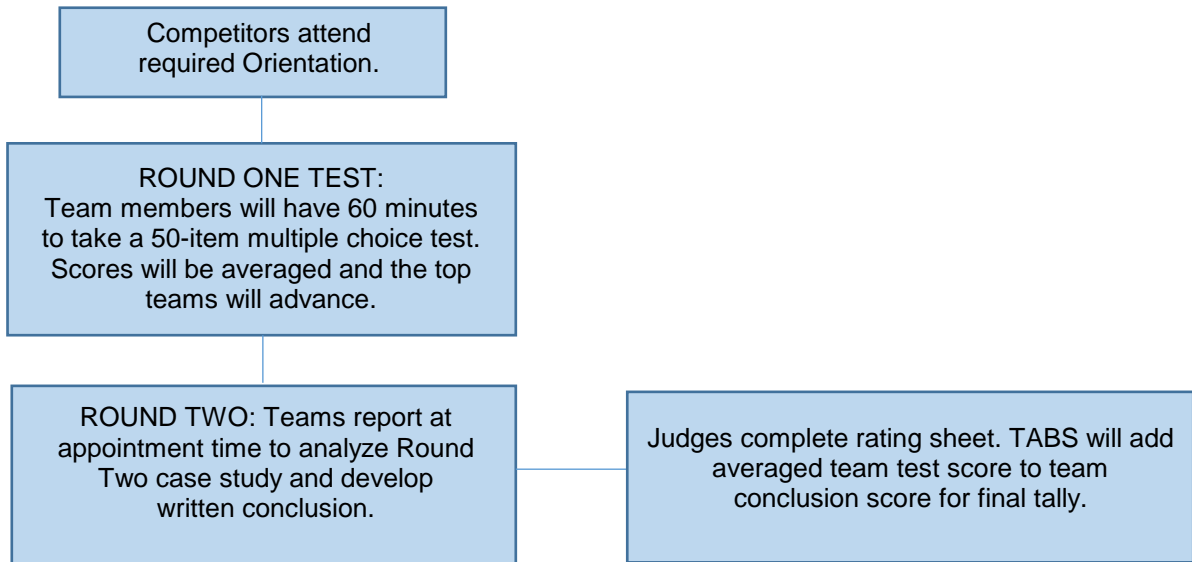
**Facilities, Equipment and Materials (Per Section)****Round One: Written Test** (Reference: All resources)

- Testing room with tables/chairs for the number of registered competitors (see [HOSA Room Set](#))
- List of competitors for check-in
- One pre-numbered test per competitor
- Scantron/answer forms- one copy per competitor
- Evaluation forms - competitor and event personnel
- #2 lead pencils with eraser to complete evaluations (event personnel)

**Round Two: Case Study Analysis/Written Conclusion**

- Case study room(s) with table and chairs – If physical evidence is provided, then a minimum of two rooms are needed per section. (see [HOSA Room Set](#))
- List of competitors for check-in
- Case study props (as needed for case study scene)
- Case study notes (for judge and EM)
- Witness, actor/victim and judge scripts as needed for case study scene
- stopwatches (one per section)
- Copy of secret case study with written conclusion form - one per team and judge
- Index cards (for team notes)
- Clip boards to be used by competitors during crime scene analysis (if needed)
- Flash card for 1 minute remaining
- Rating sheets – one per judge per team
- Evaluation Forms – competitor, judge, and personnel
- #2 lead pencils with eraser (judges & evaluations)
- Copy of guidelines for judges
- Hand sanitizer (alcohol based handrub)

## Event Flow Chart



### Sample Round One Test Questions

1. A term for the conscious and deliberate attempt to minimize or deny symptoms of a mental disorder is \_\_\_\_\_.
  - A. deception
  - B. malingering
  - C. dissimulation
  - D. incompetence
2. When a victim drowns in freshwater, the red blood cells undergo massive destruction in a process known as \_\_\_\_\_.
  - A. autolysis
  - B. pneumothorax
  - C. hemorrhage
  - D. asphyxia
3. Blow fly eggs on a dead body are usually found:
  - A. close to a wound or natural orifice.
  - B. on the chest or in a hairy body area.
  - C. under any covering such as clothing, leaves, etc.
  - D. under the body close to the ground.



## 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 2 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 A. 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.	
5. Evidence B. 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	
Items Evaluated	Excellent 5 points	Good 4 points	Average 3 points	Fair 2 points	Poor 1 points	JUDGE SCORE
5. Evidence C. 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.	
5. Evidence D. 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.	
5. Evidence E. 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 (70):</b>						