Purpose: To determine the kinetic coefficient of friction of a bowling ball.

Materials:
- Bowling ball to be tested
- Bowling ball sled that prevents the ball from rolling
- Standard lane surface sample, measuring at least 24 inches by 36 inches.
- Computer that has the WinDaq700USBO recording software and WWB analysis software.
- Electric motor assembly that will pull the bowling ball sled
- Force transducer
- "COF Form 3-19-10 Master1" Excel file
- Microfiber towel

Procedure:
1. Clean the lane sample thoroughly a microfiber towel and isopropyl alcohol. Allow the lane sample to dry completely.

2. Using SOP-BALL-4, find the total weight of the bowling ball to be tested.

3. Record the weight of the bowling ball on the "COF Form 3-19-10 Master1" worksheet.

4. Place the bowling ball in the sled with CG marking and pin of the bowling ball aligned linearly along the back edge of the sled opposite the side with the eye bolt. Ensure that the area of the bowling ball in contact with the lane sample is clear of any markings used for identification of the ball.

5. Unwind the chain containing the force transducer from around the wheel in the motor assembly and extend the sled so the length of chain is lying straight across the standard lane sample.

6. Press the "Tare" button on the display for the force transducer so the display reads zero.

7. Connect the sled to the motor assembly by placing the hook that is on the end of the chain containing the force transducer through the eye bolt on the sled.

8. Open the computer program WinDaq700USBO.

9. Select the File > Record.

10. Select the folder titled "COF Ball (year)" for the current year.

11. Create a file name using the following naming convention "BallName-SerialNumber."

12. Select "Open" and select "OK".

13. Energize the motor.

14. De-energize the motor once the ball has been pulled across the standard lane sample and just before the force transducer within the chain would warp around the wheel of the motor assembly.

15. Unwind the chain containing the force transducer from around the wheel in the motor assembly and extend the sled so the length of chain is lying straight across the standard lane sample, still connected to the bowling ball sled, but not taught.

16. Repeat Steps 13-15 for a total of eight measurements recorded by the computer.

17. Close the program window and select "Yes".

18. Open the computer program WWB.

19. Select the file that was created in step 11.

20. The zero baseline reading can be seen at the beginning of the recording where no force was being applied. Examine each of the eight peaks and using the grid on the screen and the zero baseline reading, record the median value from each of the eight individual peaks onto the "COF Form 3-19-10 Master1" worksheet.

21. The average COF and the standard deviation of the COF are displayed on the "COF Form 3-19-10 Master1" worksheet.

22. Close the WWB program window.

23. Select "Exit with no Save".