**Task 3 – Inter-instrumental agreement**

**Aim: Comparison of spectrophotometers in terms of inter-instrumental agreement expressed in terms of color differences**

1. Measure a set of color standards or samples on different spectrophotometers with di:8° and LAV settings.
2. Express the difference between measurements on different spectrophotometers by total color difference E\*, difference in chroma C\*, hue H\* and lightness L\*.
3. **Create differential graphs, where on**
   1. the x-axis is a\* and the y-axis is b\*.
   2. the x-axis is E\* and the y-axis is C\*.
   3. the x-axis is E\* and the y-axis is H\*.
   4. the x-axis is E\* and the y-axis is L\*.
4. **Make comparisons for spectrophotometer 1 and 2, spectrophotometer 1 and 3 and spectrophotometer 2 and 3.**
5. Prepare a protocol. **At the end of the protocol, answer the questions below and comment the results.**

In the log header, please include the title of the task, your name, the time and day of the practical, your field of study, and the year of study. In the prepared protocol, please indicate the laboratory conditions under which the assessment and measurements were carried out, as well as the instrumentation and tools used in the processing of the task.

In the protocols, follow standard text layout (block alignment, font size for main text 12 and headings 14 with bold).

**Laboratory conditions:** 22,5 °C, 32,9 % humidity

**Instruments: spectrophotometer 1 –** Datacolor Spectraflash 450 with di:8° and 30 mm aperture, 71,6 % amount of UV

**spectrophotometer 2 –** Datacolor Spectraflash 600 with di:8° and 30 mm aperture, 83,6 % amount of UV

**spectrophotometer 3 –** Datacolor Spectraflash 300 with di:8° and 10 mm aperture

**Tools:** color standards or samples

**Question:**

1. **Which three basic attributes can be used to describe the color?**
2. **How to calculate the total color difference?**