Title of the lab

\*Course name

Students names

*Abstract*— Short summary of the work done

# Introduction

Write here about Young’s modulus and its measurement using force measurement technique based on Contact Mechanics theory.

# METHODS

## Apparatus

Describe measurement setup and its operation. You may use e.g. your own photo of the system, or schematics from the lab materials.

## Measurement methods

Describe three measurement methods you used in the lab work. E.g. you may schematically draw expected output plots.

## Processing the data

Describe how you processed the data:

* conversion of raw data (sensor output from Volts to grams and into Newton, flipping the data),
* deducing effective modulus of elasticity from the slope of the plotted data (linear regression),
* calculating Young’s modulus from obtained effective modulus of elasticity

# RESULTS

## Continuous movement with single scan sensor reading

Present your measurement data plots and calculated Young’s modulus for each sample.

## Incremental steps movement with single scan sensor reading

Present here your data plots from corresponding experiments. You may zoom in measurement points for 1-2 indentation positions and discuss the result (stress relaxation).

## Incremental steps movement with continuous sensor reading

Present here your data plots from corresponding experiments. You may zoom in some regions and discuss the result (stress relaxation).

# Discussion

Discuss your results here.

Do calculated Young’s modulus values correlate with values from literature? Did you observe stress relaxation in incremental steps experiments? What were your problems during the lab, data analysis or report preparation?

##### References

1. G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955. *(references)*
2. J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
3. I. S. Jacobs and C. P. Bean, “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.
4. K. Elissa, “Title of paper if known,” unpublished.
5. R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.
6. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
7. M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.

**Example of tables and figures formatting:**

(For your information. Don’t include this part into report)

##### Example of table title and format

| Table Head | Table Column Head | | |
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1. Example of a figure caption.