

EP486 Microcontroller Applications
First Midterm Exam Question
Gaziantep University, Department of Engineering of Physics
(Deadline: 25/11/2014)

Question

A spherometer is an instrument for the precise measurement of the radius of a sphere. Originally, these instruments were primarily used by opticians to measure the curvature of the surface of a lens.

By using Arduino board, design and construct a simple Digital Sphero-meter. Calibrate your spherometer such that it works fine for the range [-1.0 cm, +1.0 cm] and its maximum measurement uncertainty is 1 mm.

See also:

- <http://en.wikipedia.org/wiki/Spherometer>
- <http://physics.kenyon.edu/EarlyApparatus/Optics/Spherometer/Spherometer.html>
- <https://www.google.com.tr/search?q=digital+spherometer&newwindow=1&client=firefox-a&rls=org.mozilla:tr:official&channel=sb&tbo=isch&tbo=u&source=univ&sa=X&ei=7e9qVNXiFaxOygPi7YKQDA&ved=0CDQQsAQ&biw=1280&bih=893>