**Basic Fluid Mechanics Terms from Chapter 2**

These are basic fluid mechanics terms mainly from Chapter 2.

surface force

body force

gage pressure = absolute pressure – atmospheric pressure

absolute pressure or total pressure or actual pressure

vacuum pressure = pressure measured when the gage pressure is negative

manometer = device for measuring pressure differences

A barometer is a device for measuring the atmospheric pressure. A manometer is a device used to measure the pressure of liquid by filling them in inclined columns.

center-of-pressure = location on a surface where the hydrostatic force acts

hydrostatic force = force on a submerged object due to the hydrostatic pressure (pressure due to the depth of the liquid)

buoyant force = upward force on a partially or completely submerged object

buoyant force DEPENDS ON SURFACE AREA!!!

Archimedes principle = buoyant force is equal to the volume of the object times the specific weight of the fluid

2nd moment of area about the centroidal x-axis.

-The center of pressure is ALWAYS below the centroid of the area because Ixc always > 0.

Also: Advantage of an inclined manometer

-Can measure small pressure changes more accurately because of the increased gage fluid length

-This is because the length of the fluid increases with small inclination angles (see formula at page 56).

-smaller angles mean smaller pressure gradient and larger fluid length, which is easier to read, and thus more accuracy.