

Fluids

Textbook

Physics: Principles with Applications (2009), Chpt. 10

Homework/Activities

- Worksheets (Physics Kahuna)

Due: _____

Concepts/Topics

- Phases/states of matter (including unusual states) (be familiar)
- Density/specific gravity (work problems/concept)
- Pressure ($P = F/A$) (work problems)
- Hydrostatic pressure ($P = \rho gh$) (work problems)
- Atmospheric pressure, gauge pressure (concept)
- Pascal's principle/hydraulics, barometers (concept/work probs.)
- Archimedes' Principle, buoyant force, apparent weight (work probs./concept)
- Fluid flow continuity ($A_1v_1 = A_2v_2$) (concept/probs)
- Bernoulli's Equation ($P + \frac{1}{2}\rho v^2 + \rho gy = \text{constant}$) (concept/probs)

Web Resources

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| Hydrostatic pressure (WWU) | faculty.wwu.edu/vawter/PhysicsNet/Topics/Pressure/HydroStatic.html |
| Hydrostatic pressure (BrightStorm) | www.youtube.com/watch?v=YrO39_WhvCY |
| Pascal's Principle (WebPhysics) | webphysics.davidson.edu/physlet_resources/bu_semester1/c23_pressure_pascal.html |
| Pascal's Principle (BrightStorm) | www.youtube.com/watch?v=ys5HTeIY-Pk |
| Archimedes' Principle (Weber) | physics.weber.edu/carroll/archimedes/principle.htm |
| Archimedes' Principle (TED Ed) | www.youtube.com/watch?v=ijj58xD5fDI |
| Archimedes' Principle Demo (Hewitt) | www.youtube.com/watch?v=g6aErhwFXsg |
| Archimedes' Principle (BrightStorm) | www.youtube.com/watch?v=KOWYFHBvwws |
| Archimedes' Principle (Hila Science) | www.youtube.com/watch?v=eQsmq3Hu9HA |
| Buoyancy (Hyperphysics - GSU) | hyperphysics.phy-astr.gsu.edu/hbase/buocon.html |
| Buoyancy (BrightStorm) | www.youtube.com/watch?v=72kHQO-tgD8 |
| Buoyant Force (Hila Science) | www.youtube.com/watch?v=VDSYXmvjg6M |
| Continuity Equation (Princeton) | www.princeton.edu/~asmits/Bicycle_web/continuity.html |
| Continuity Equation (BrightStorm) | www.youtube.com/watch?v=vWEAQ8OqFP8 |
| Continuity Equation (Ms. Twu) | www.youtube.com/watch?v=L_GsiXm_8NY |
| Continuity Equation (UWE - Bristol) | www.youtube.com/watch?v=LbcgYCYmZJw |
| Bernoulli's Equation (Boston Univ) | physics.bu.edu/~duffy/py105/Bernoulli.html |
| Bernoulli's Equation (Hyperphysics) | hyperphysics.phy-astr.gsu.edu/hbase/pber.html |
| Bernoulli's Principle (MitchellScience) | mitchellscience.com/bernoulli_principle_animation |
| Bernoulli's Principle (BrightStorm) | www.youtube.com/watch?v=QWEq3xifCDw |
| Bernoulli Effect (ScienceTheater) | www.youtube.com/watch?v=olVJzVadiFs |