Key equations to remember

Heat storage and its application to mixed layers ($T$ constant with height):

$$\Delta H_s = \int \frac{\partial}{\partial t}(\rho c T) dz$$  \hspace{1cm} (1)

Coriolis parameter:

$$f = 2\Omega \sin(\phi)$$  \hspace{1cm} (2)

Geostrophic wind balance:

$$U_g = -\frac{1}{\rho f} \frac{\partial P}{\partial y}; \quad V_g = \frac{1}{\rho f} \frac{\partial P}{\partial x}$$  \hspace{1cm} (3)

Shear stresses:

$$\tau_{zz,\text{visc}} = \mu \frac{\partial u}{\partial z}; \quad \tau_{zz,\text{Reynolds}} = \rho K \frac{\partial u}{\partial z}$$  \hspace{1cm} (4)

Richardson number:

$$Ri = \frac{S}{\left| \frac{\partial \theta_c}{\partial z} \right|^2}$$  \hspace{1cm} (5)

where $S$ is the static stability parameter

$$S = \frac{g}{T_v} \frac{\partial \theta_c}{\partial z}$$  \hspace{1cm} (6)

Turbulence kinetic energy:

$$TKE = \frac{1}{2}(w')^2 + \frac{1}{2}(v')^2 + \frac{1}{2}(w')^2$$  \hspace{1cm} (7)

In addition, you should know the equation of state; the essential concepts of energy conservation applied to a surface and a finite layer; the relationship between dynamic and kinematic viscosity.