

## Glossary

**center of gravity** the point where the total weight of the body is assumed to be concentrated

**dynamic equilibrium** a state of equilibrium in which the net external force and torque on a system moving with constant velocity are zero

**mechanical advantage** the ratio of output to input forces for any simple machine

**neutral equilibrium** a state of equilibrium that is independent of a system's displacements from its original position

**perpendicular lever arm** the shortest distance from the pivot point to the line along which  $F$  lies

**SI units of torque** newton times meters, usually written as  $\text{N} \cdot \text{m}$

**stable equilibrium** a system, when displaced, experiences a net force or torque in a direction opposite to the direction of the displacement

**static equilibrium** a state of equilibrium in which the net external force and torque acting on a system is zero

**static equilibrium** equilibrium in which the acceleration of the system is zero and accelerated rotation does not occur

**torque** turning or twisting effectiveness of a force

**unstable equilibrium** a system, when displaced, experiences a net force or torque in the same direction as the displacement from equilibrium