

## 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