

## CHAPTER OVERVIEW

### 12: Harmonic Oscillator

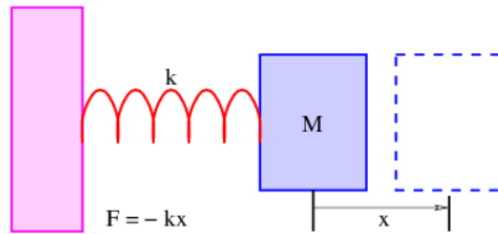


Figure 12.1:: Illustration of a mass-spring system.

Figure 12.1: illustrates the prototypical harmonic oscillator, the mass-spring system. A mass  $M$  is attached to one end of a spring. The other end of the spring is attached to something rigid such as a wall. The spring exerts a restoring force  $F = -kx$  on the mass when it is stretched by an amount  $x$ , i. e., it acts to return the mass to its initial position. This is called Hooke's law and  $k$  is called the spring constant.

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