

## Lecture 12

### Pre-Lecture Preparation (due within the first 5 minutes of class):

- Read pages 483 – 495 in the textbook (Serway 9<sup>th</sup> edition) and do the following:
  - 1) Quick Quizzes: 16.1 – 16.4
  - 2) Book Objective Questions (p. 499): 2, 3, and 5
  - 2) Book Problems (p. 501): 9, 24

### Goals for the Lecture:

- 1) Understand the difference between transverse and longitudinal waves
- 2) Understand the wave function  $y(x, t) = A\sin(kx - \omega t + \varphi)$  for sin waves and how to use it
- 3) Velocity of a wave:  $v = \lambda f$
- 4) Understand and be able to calculate transverse speed and acceleration
- 5) Understand what affects the speed of a wave on a string and how to calculate it
- 6) Understand reflection and transmission of mechanical waves

### Post-Lecture Study Guide (I do not collect this):

Review the worksheets or other lecture material within 24 hours (preferably the same day as the lecture) to reinforce the ideas. Review the pre-lecture questions to make sure you understand them.

Do problems:

Ch 16: Conceptual Questions: 2, 3, 5, and 6

Ch 16: Objective Questions (p. 499): 6, and 9

Ch 16: Problems: 15, 26

Continue with the additional recommended study problems from chapter 16