PHY1106: Waves and Oscillators	Dr. Pete Vukusic

Lecture 5.

Lecture objectives.

- To understand the concept of logarithmic decrement and decay of energy.
- To meet and become accustomed to ideas on Q and energy dissipation.
- To set up the equation of motion for a forced oscillator.
- To appreciate the difference between transient and steady state motion.

Post-lecture tasks.

- Check through the summary on periodic motion in Young (p. 416).

- Makes sure your notes are in a good state and that at this, nearly half-way through my part of the course, you are happy with the ideas you have met. If you are not, sort it out **sooner** rather than later, either by seeing me or your tutor.

- Calculate the logarithmic decrement of a damped SHM system in which a mass of 0.5 kg oscillates on a spring of k-constant 175 N/m with a damping coefficient of 6 kg/s. (Past paper question).

- At what new resonant frequency will the system oscillate if all three of these variables are halved? (this question asks for frequency, not angular frequency!).