

PENNSSTATE



MIDTERM THU 8:15-10:15 PM

101 LEONHARD

LAST LEC ON MIDTERM

LABS TONIGHT 6:00 Mc, Jes, Jos, Lov
TOMORROW 6:00 Da, Bi, Rat

8:00 JM, Sam, Ran,

REPORTS DUE, BRING LAB PREP

IE 553 HW #7 DUE WED

Engineering of Human Work 0 ALLOW

.0006 => MIN

.036 => REC

Dr. Andris Freivalds

Class #20

PENNSYLVANIA STATE UNIVERSITY



IE 553

Engineering of Human Work

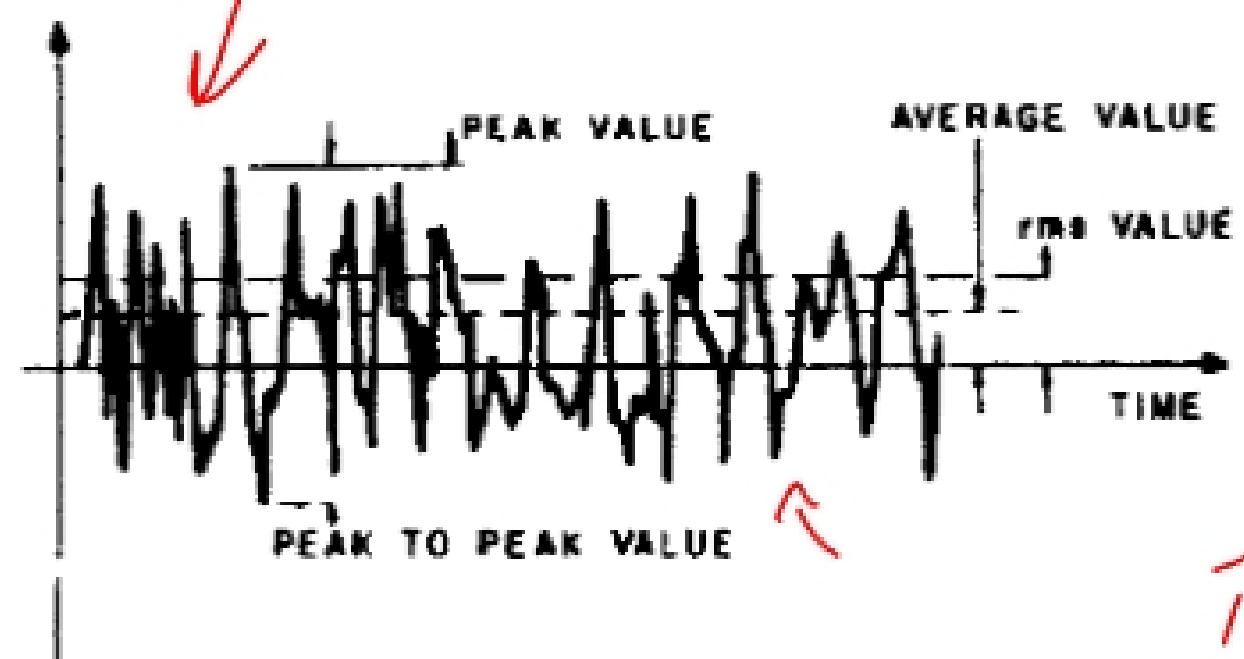
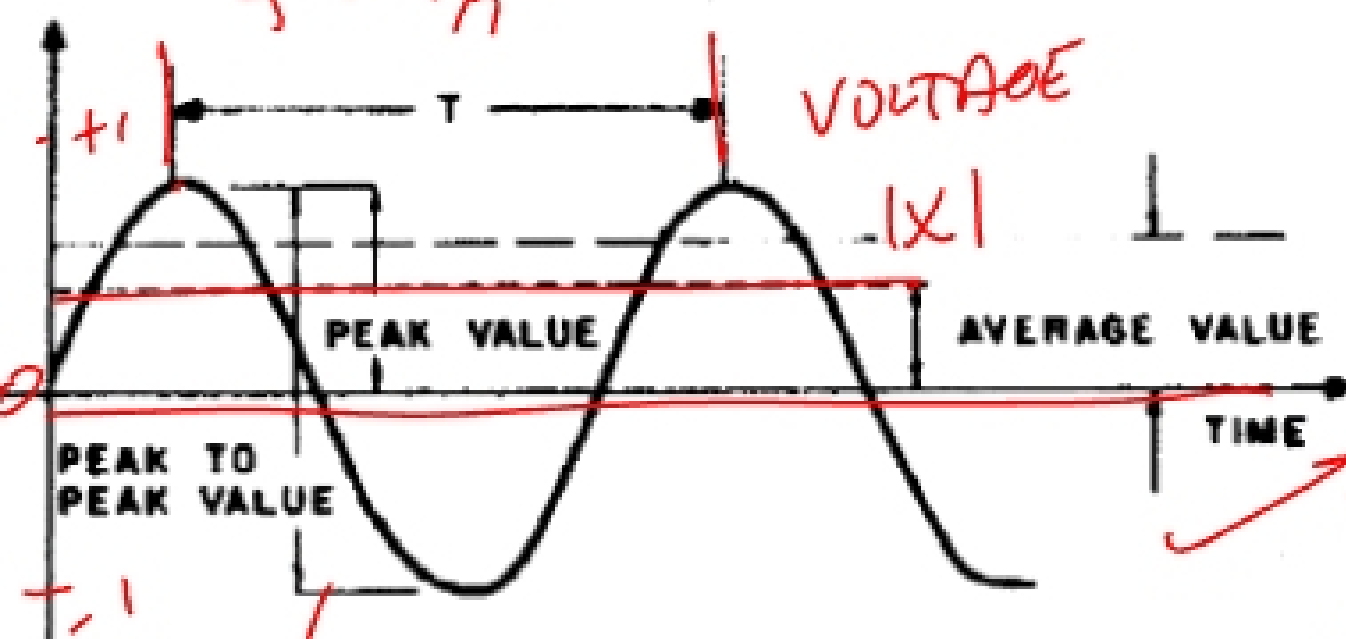
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Vibration (Ch. 12)

$$\int_0^T x dt = 0$$

$$f = 1/T$$



- Forced = external
- Free = internal
- Average = $(\int_0^T |x| dt / T)^{1/2}$
- RMS = $(\int_0^T x^2 dt / T)^{1/2} \approx V^2 / R$ POWER
- dB = $20 \log_{10} (a/a_0)$
- Piezoelectric sensors
- Accelerometers

$$20 \times 6 = 120 \text{ dB}$$

$$1000000$$