

# PENNSSTATE

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CLASS ON MON  
TUE-FRI

**IE 553**

METABOLIC MODELING

**Engineering of Human Work**

Dr. Andris Freivalds

Class #27

LAB #3 NOV 29

CLASS

# PENNSYLVANIA STATE UNIVERSITY

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## **IE 553**

# **Engineering of Human Work**

Dr. Andris Freivalds

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# Intermittent Work (Work/Rest Cycles)

- Short, frequent W/R cycles are best
- Self-paced work with spontaneous pauses
- For prolonged work,  $\dot{V}O_2$  should be at steady state

$$\dot{E} = 4.92 \dot{V}O_2 \quad (RQ=0.9)$$

$$\dot{V}O_2 = \dot{V}_E \left( \frac{F_{iO_2}}{P_{iO_2}} - F_{O_2} \right) -$$

↑ 0.17

Production 247 kJ (25,200 kpm) in 30 min

Exercise: rest 1:2 *10 min*

