

LECTURE #6 NOTES

OBJECTIVES

- Identify the body's three energy systems and explain their relative contribution to energy expenditure during different physical activities.
- Illustrate the relationship between oxygen uptake and exercise intensity during steady-rate and progressively increasing increments of exercise up to maximum.
- Discuss oxygen uptake during exercise.
- Discuss how to measure work; force and power
- Know how to measure laboratory and performance measures of the three energy systems

THE THREE ENERGY SYSTEMS

IMMEDIATE ENERGY: THE ATP-CP SYSTEM

SHORT-TERM ENERGY: THE LACTIC ACID SYSTEM

MORE ABOUT BLOOD LACTATE ACCUMULATION

LONG-TERM ENERGY SYSTEM – VO_{2MAX}

OXYGEN UPTAKE DURING EXERCISE

THE THREE ENERGY SYSTEMS - INTERACTIONS

MEASURING ENERGY TRANSFER

MEASURES OF FORCE, WORK AND POWER

MEASURES OF WORK (ENERGY)

EVALUATING THE IMMEDIATE ENERGY SYSTEM

MEASURING POWER

MEASURING POWER

MEASURING THE SHORT TERM SYSTEM

TESTS OF AEROBIC POWER

EVALUATING THE LONG TERM SYSTEM

FACTORS AFFECTING VO_{2MAX}

PREDICTING VO_{2MAX}