

Lab Topics

** **NO labs** for section **002** on October 10 (Thanksgiving)

** **NO labs** for sections **003 to 008** from October 25 to 28 (Study Break)

Evaluation:

- | | | |
|---|--------|-------|
| 1. Mid-term: Tuesday, November 1: | 5:30pm | (20%) |
| 2. Lab exam: Thursday, December 1: | 5:30pm | (20%) |
| 3. Practical Exam | | (15%) |
| 4. Lab assignments (5) | | (10%) |
| 5. Lab tutorials (5) | | (5%) |
| 6. Final exam: TBA during December exam period. | | (30%) |

Lecture outline:

Physiology of Fitness Appraisal Chapter 1

I. A. Measuring Gas Exchange to Evaluate Cardiovascular Function and Cellular Respiration.

Maximal Oxygen Consumption (VO_2 Max)

B. Coupling

Steady State: $\text{VO}_2 = \text{CO}_2$

C. Physical Activity is the Major Challenge to Homeostasis of the Cellular Environment.

D. Patterns of Change in O_2 uptake and CO_2 Output (external respiration) as related to function and fitness.

II. Physiology related to Test protocols that measure Maximum Oxygen Consumption (VO_2 max tests).

(As opposed to predictive tests for VO_2)

- A.
 - 1. Fatigue
 - 2. Dyspnea
 - 3. Pain

- B. (Continued) Physiology related to Test protocols that measure Maximum Oxygen Consumption ($\dot{V}O_2$ max tests).**
 - 1. Substrate Utilization
 - 2. O_2 cost of work
 - 3. Lactate Increase and Anaerobic Threshold
 - 4. Kinetics

- III. A. Dysfunction of the Cardio Respiratory Systems
 - Blood Pressure and Hypertension

- B. Dysfunction of the Cardio Respiratory Systems**
 - 1. Heart/ CV Disease

- C. Ventilatory Disorders**

- IV. **Testing for Cardiorespiratory Fitness**
 - Pre test control*
 - A. Criteria for a good test of CV fitness.**

 - B. Criteria for stopping a test.**
 - Symptoms

 - C. Criteria for stopping a test: Blood Pressure**
 - D. Criteria for stopping a test: HR response**
 - E. Submaximal Lab Tests**
 - F. Maximal Tests**
 - Purposes*
 - G. Testing Protocols and their effect on Aerobic Function**
 - H. Field and Performance tests for determining $\dot{V}O_2$ max**
 - I. $\dot{V}O_2$ max**

- V. The interplay between Science and the Application of the Science.

Notes

Components of maximal testing

**Detaching your brain.
Emotional incapacitation**

Article

Monitoring high intensity endurance exercise with heart rate and thresholds
Marcel R Boulay, JA Simoneau, Gilles Lortie, Claude Bouchard
Med Sci Spt Ex. Vol 29, No1, 125-132, 1997

**Chapter 2
ECG/EKG**

I. History

Chapter 3

I. Body Composition: Energy Expenditure

A. Metabolism: RQ

B. Body Composition:

1. Behnke Classification Schema
2. Summary of Behnke Model
3. Brozek/Siri Model
4. Chemical Model
5. Anatomical Model

C. Special Considerations: Estimation of Basal Metabolic Rate

II. Ideal Body Composition

III. Prevalence of Body Weight

IV. Methods of Assessing Body Composition

1. BMI
- 2.

Chapter 4 Physiological Testing

I. **Skeletal Muscle: Fibre Type, Glycogen and Metabolic Capacity**

1. Percutaneous biopsy technique:
2. Technique
3. Fibre typing: Recognition of Fibre type
4. Stains

NADH tetrazolium reductase
Periodic-acid Schiff stain

5. Assays: Manufacturing Metabolism

Blood/Muscle Lactate:

PFK

HK

SDH + CS

Above information used for indication of Skeletal Muscle and Function:

Chapter 5 CSEP-PATH Certification

I. **Determinants of Health**

II. **Role of Appraiser**

III. **Health Benefits**

IV. **Changing your lifestyle**

- A. Understanding Behaviour Change
 - B. Structure of Self Esteem
 - C. SE affects Behaviours:
 - D. Factors inherent in SE:
 - E. Self Esteem effected by perceptions:
 - F. Self esteem is Learned
- Unconditional Acceptance
Conditional Acceptance
Bottom Line Concept:

V. **Factors Affecting Participation in Physical Activity (change/growth)**

- A. Reasons for activity:
- B. Beliefs:
- C. Attitudes:
- D. Intentions:

VI. Process or Stages of Change

VII. Counseling

Issues requiring referral to experts

VIII. Goals:

IX. CSEP – History – Advise – Relapse – Case Studies

Course/University Policies

1.

8. Laptops for the **purpose of typing lecture notes** are permitted in class, but please be respectful to your fellow students and turn the sound off. If I receive complaints from other students regarding noise or other disruptive behaviour (e.g., watching videos on YouTube.com, updating your Facebook status, playing Solitaire), your classroom laptop privileges will be revoked.
9. Audio and/or videotaping of lectures is not permitted unless approval has been sought from the instructor in advance.

STUDENT CODE OF CONDUCT

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit

<http://www.uwo.ca/univsec/board/code.pdf>

ENGLISH PROFICIENCY FOR THE ASSIGNMENT OF GRADES

Visit the website <http://www.uwo.ca/univsec/handbook/exam/english.pdf>

SUPPORT SERVICES

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>
2. Student Health -- <http://www.shs.uwo.ca/student/studenthealthservices.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>