

Western University  
Faculty of Health Sciences  
**School of Kinesiology**

Learning Outcomes/Schedule:

## Lecture outline:

### Physiology of Fitness Appraisal Chapter 1

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

Maximal Oxygen Consumption ( $\text{VO}_2$  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 $\text{O}_2$ uptake and $\text{CO}_2$ Output (external respiration) as related to function and fitness.

#### II. Physiology related to Test protocols that measure Maximum Oxygen Consumption ( $\text{VO}_2$ max tests).

*(As opposed to predictive tests for  $\text{VO}_2$  max)*

##### A.

1. Fatigue
2. Dyspnea
3. Pain

##### B. (Continued) Physiology related to Test protocols that measure Maximum Oxygen Consumption ( $\text{VO}_2$ max tests).

1. Substrate Utilization
2.  $\text{O}_2$

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 VO<sub>2</sub> max**

**I. VO<sub>2</sub> max**

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

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*Notes*

*Components of maximal testing*

**Detaching your brain.**

**Emotional incapacitation**  
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**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

**Chapter 2**

**ECG/EKG**

**I. History**

**II. Rhythmic Excitation of the Heart**

*1. The heart as excitable tissue.*

*2. Action Potentials*

Figure: 1. Evolution of PQRST.

2. Limb leads.

3. Augmented limb leads.

4. Precordial leads.

III. EKG Interpretation

1. Rate
2. Rhythm
3. Axis
4. Hypertrophy
5. Infarction

1. **Rate**
  - a. Ectopic Foci.
  - b. Rate :

4. Skin thickness;
5. Constant fat fraction:

**c. Prediction Equations**

6. **Hydrostatic Weighing**
  - a.

- 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:

Assignments/tutorials/quizzes are due as stated in the course syllabus/OWL

material presented in a particular class. **Unless explicitly noted otherwise, you may not make audio or video recordings of lectures – nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.**

**4. Health and Wellness:**

Information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<http://www.health.uwo.ca/>) for a complete list of options about how to obtain help.

**5. 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 & Wellness* -- <http://www.health.uwo.ca/>
3. -- <http://www.registrar.uwo.ca/>
4. *Ombudsperson Office* -- <http://www.uwo.ca/ombuds/>

**6. Documentation for Academic Accommodation (Illness, Medical/Non-Medical Absences):**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_12](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_12)

Students who experience an extenuating circumstance (illness, injury, or other extenuating circumstance) sufficiently significant to render them unable to meet academic requirements temporarily may submit a request for academic consideration through the following routes:



presentations, or essays) worth more than 30% of any given course;

For medical and non-medical absences that are not eligible for self-reporting, Kinesiology students must submit an Academic Consideration Request form found online

[https://www.uwo.ca/fhs/kin/undergrad/files/accommodation\\_request.pdf](https://www.uwo.ca/fhs/kin/undergrad/files/accommodation_request.pdf) in addition to an SMC or appropriate documentation in the event of a non-medical absence. These documents will be retained

LQ WKH VML OGH DQV ZLOO EH KHOG LQ FRQILGHQFH LQ DFFRUGDQFH  
Record Information Privacy Policy.

7. **Grades:** Where possible, assignment objectives and rubrics will be posted on OWL. Should you have a concern regarding the grade you received for an assignment or feel that it is unfair in any way, you must wait 24 hours from the receipt of the assignment to approach the instructor or TA. In doing so, please make an appointment and prepare in writing, with evidence, why you feel your grade is inappropriate. Please be aware that your grade could go up/down/or stay the same in requesting a grade reassessment. Note that calculation errors (which do occur!) should be brought to my attention immediately.

Generally, students can expect some form of feedback on their performance in a course before the drop date.

November 9th, 2019 (for first term half-courses)

November 27th, 2019 (for full-year courses)

March 4th, 2020 (for second term half-or full year courses)

A+	90-100	<i>One could scarcely expect better from a student at this level</i>
A	80-89	<i>Superior work that is clearly above average</i>
B	70-79	<i>Good work, meeting all requirements and eminently</i>
C	60-69	<i>Competent work, meeting requirements</i>
D	50-59	<i>Fair work, minimally acceptable.</i>
F	below 50	<i>Fail</i>

**Rounding of Grades** (for example, bumping a 79 to 80% will occur in this course).

8. **Classroom Behaviour:** Class will begin promptly at the time specified at the top of page one of this syllabus. In the event that you must arrive late, please enter the classroom with a minimal disturbance to the class. Please keep all electronic devices on silent and avoid distracting classmates.

#### 9. **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

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