

HSS 408L – PHYSIOLOGY OF EXERCISE LABORATORY

Department of Health & Sport Science
University of Dayton

Monday (-01) / Wednesday (-03) 3:00-4:15pm
Tuesday (-02) / Thursday (-04) 9:00-10:15am
CPC 220C
1 semester credit hour

Instructor – Ms. Megan Clayton, MS.Ed.

Email – mclayton1@udayton.edu

Office/Hours – TF Rm 40L; By appointment only. *Email is best means of contact*

Graduate Assistant – Laura Schemenauer / schemenauerl1@udayton.edu / TFRm30

REQUIRED Textbooks/ Materials/ Resources

G.G. Haff and C. Dumke. *Laboratory Manual for Exercise Physiology*. Human Kinetics, 2012.

American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription (8th Ed)*. Philadelphia, PA, Lippincott, Williams & Wilkins: 2009.

Hand-held calculator (Cell phones will NOT be permitted for use as calculators. **Please** place your cell phones in your book bags/back pack and turn off the volume.)

Heart Rate Monitor The HSS department has made a special purchase of Polar FS-3 heart-rate monitors that you may purchase for \$70.00 (cash, check or money order only, NO credit cards, please). Please see Laura Greger or Robyn Powers, HSS Administrative Assistants.

Handout material will be provided in class and/or sent to you via email. Students are responsible for printing, reading, and comprehending said material. You are **encouraged** to keep your lab materials in a binder/folder/notebook to supplement your laboratory manual.

Web Site: <http://nutrition.uvm.edu/bodycomp/>

Professionalism/ Participation/ Attendance

This class will be conducted as a **hands-on** Exercise Physiology **Laboratory** experience. *Please dress appropriately and plan to actively participate.*

You are expected to be in attendance at **ALL** lab sessions. Tardiness and/or absences will influence final letter grade. If you are going to miss a lab session, please notify the instructor **PRIOR** to the day of the scheduled class and plan to make up the absence in another lab session.

You must be willing to serve as a test subject for any or all of these tests. There will be no exceptions to this policy. It is extremely important that you, as future exercise scientists,

physical therapists, dietitians, etc. understand the importance and necessity for these essential tests and measures.

The primary emphasis of this laboratory class will be the development of testing skills for the measurement and assessment of aerobic power and body composition. We will learn how to administer several different tests to measure these physiological parameters.

Projects - See attached outline(s).

For each of the primary laboratory skills you will be exposed to throughout the semester: treadmill/bicycle ergometry and body composition, you will be expected to test a minimum of four subjects – two of whom < 30 years of age and two who **must** be \geq 30 years of age. You will collect the appropriate data, analyze your data, compare the data with national norms, and then share this data with your test subjects. You will professionally prepare this information for your subjects and your course instructor. Assignments **will not** be accepted via email.

(NOTE: I encourage students to begin looking for subjects >30 years of age as soon as possible).

Final Grade

- | | |
|---------------------------------|-----------------------|
| 1. Exam I | 50 points |
| 2. Project | 25 points |
| 3. Exam II | 50 points |
| 4. Project II | 25 points |
| 5. Professionalism & Attendance | 2 points/ lab session |

****Being prepared to participate in class which includes but is not limited to arriving to class on time, bringing your textbooks, lab manuals, heart rate monitors and calculators to class, dressing appropriately to participate as a test subject, and **enthusiastically** volunteering to serve as a test subject****

Provisions for Students with Special Needs:

To request academic accommodations due to a disability, please contact SLS - Office for Student Learning Support at 229.2066 located in the Ryan Harris Learning-Teaching Center. If you qualify for a self-identification form indicating that you need assistance, please present it immediately so we can arrange any accommodations you might need to insure your success in this course.

To request academic accommodations due to a disability, please contact the Office for Students with Disabilities, 002 Albert Emanuel Hall, (937) 229-3684. If you have a self-identification form from the Office of Students with Disabilities indicating that you have a disability, which requires accommodation, please present it to me so we can discuss the accommodations you might need in the class.

ACADEMIC HONOR CODE (APPLICABLE TO UNDERGRADUATE STUDENTS)

(Approved by the Academic Senate, April 25, 2008)

<http://campus.udayton.edu/~studev/studenthandbook/PDF/Academics.pdf>**I. Introduction**

As a Marianist, Catholic university committed to the education of the whole person, The University of Dayton expects all members of the academic community to strive for excellence in scholarship and in character. As stated in the University's *Student Handbook*, —The University of Dayton expects its faculty and administration to be instrumental in creating an environment in which its students can develop personal integrity.

To uphold this tradition, the university community has established an academic honor code for its undergraduate schools, including the College of Arts and Sciences, the School of Business Administration, the School of Education and Allied Professions, and the School of Engineering. Students are requested to sign a pledge certifying that they understand the provisions of the Academic Honor Code and will abide by it upon matriculation to the University.

II. The Honor Pledge

Potential undergraduate students of the University of Dayton shall be made aware of the University's Academic Honor Code after the application period but before matriculation. Upon matriculation, the student shall be requested to sign the pledge as follows:

The University of Dayton Academic Honor Code: A Commitment to Academic Integrity

I understand that as a student of the University of Dayton, I am a member of our academic and social community,

I recognize the importance of my education and the value of experiencing life in such an integrated community,

I believe that the value of my education and degree is critically dependent upon the academic integrity of the university community, and so

In order to maintain our academic integrity, I pledge to:

- Complete all assignments and examinations by the guidelines given to me by my instructors,
- Avoid plagiarism and any other form of misrepresenting someone else's work as my own
- Adhere to the Standards of Conduct as outlined in the Academic Honor Code.

In doing this, I hold myself and my community to a higher standard of excellence, and set an example for my peers to follow.

Signed: _____

Dated: _____

Faculty shall make known the expectations for completing assignments and examinations at the beginning of each course, and list the expectations within the course syllabus. Faculty are encouraged to discuss these expectations with students in a manner appropriate for each course.

HSS 408L – PHYSIOLOGY OF EXERCISE LABORATORY PROJECT OUTLINES

Project 1: Ergometry/Aerobic Power Project Outline

4 subjects: Two subjects <30 years of age; Two subjects ≥ 30 years of age

For EACH subject you will include:

- Basic and anthropometric information
- All collected data/data sheets including necessary variables (ie. power outputs, evidence of SSHR, etc.)
- General submaximal aerobic results (as outlined below or in table format)
- Brief narrative/description addressing results
 - Were results what you expected? Why or why not?
 - Why did you select certain variables of power output? (resistance, speed)
 - Explanation/hypothesize reason(s) for noticeable differences among estimated aerobic power values among the three tests
 - Explanation to the subject of category/percentile in regards to test performance and aerobic power
 - Address any complications/adversaries to testing procedures (ie. Test termination, if test inappropriate to subject AEB, etc.)

Basic Information

Initials

Gender

Age

Age Predicted Max Heart Rate (APMHR)

Submax Aerobic Target HR Zone

Anthropometric Information

Height: in, cm

Weight: lbs, kgs

BMI: kg/m², Classification

Submaximal Aerobic Tests

Astrand-Rhyming

Absolute Units: _____ L/min

Category:

Relative Units: _____ mL/kg/min

Category:

YMCA

Absolute Units: _____ L/min

Category:

Relative Units: _____ mL/kg/min

Category:

Ebbeling

Relative Units: _____ mL/kg/min

Percentile:

Project 2: Anthropometry/Body Composition Project Outline

4 subjects: Two subjects <30 years of age; Two subjects ≥ 30 years of age

For EACH subject you will include:

- Basic and anthropometric information
- All collected data for circumference and skin-fold measures/sites
- Results (outlined or in table format) + Classification
- Calculations of Desirable Body Weight with reasoning/justification
- Brief narrative/description addressing results
 - Were results what you expected? Why or why not?
 - Why did you select certain anatomical sites and prediction equations?
 - Explanation/hypothesize reason(s) for noticeable differences among results.

Basic Information

Initials

Gender

Age

Height: in, cm

Weight: lbs, kgs

BMI: kg/m², Classification

Circumference Data

Waist: Classification:

Hip: Classification:

Skin-fold Data

For EACH subject select and collect data for TWO appropriate SKF prediction equations.

Name appropriate equation(s) and adjust table for sites.

Anatomical Sites	SKF msmt 1 (mm)	SKF msmt 2 (mm)	Avg. SKF

Sum of SKF: _____ mm

Estimated %BF: _____ %

Fat Mass: _____ lbs, _____ kg

Lean Mass: _____ lbs, _____ kg

Desirable Body Weight

For EACH subject, use the results from one of the selected SKF prediction equation and develop a desirable body weight for this subject. Assume this is a 6 month goal. Justify your answer.

HSS 408Lab Fall 2012 Course Calendar (Tentative)

*Calendar may be subject to change(s) during the semester.
Any and all changes will be made by the instructor,
in agreement between the instructor and (majority of) students.
Students will be notified of all changes ahead of time.*

Lab Session	Mon (01)	Tues (02)	Wed (03)	Thurs (04)	Topic	Due
1	8/27	8/28	8/22	8/23	Introduction: Syllabus/ Lab Experience/ Units/ Conversions	
2	9/10	9/4	8/29	8/30	Aerobic Power/ Bicycle Ergometry (Astrand-Rhyming)	
3	9/17	9/11	9/5	9/6	Bicycle Ergometry (A-R)/ Blood Pressure	
4	9/24	9/18	9/12	9/13	Bicycle Ergometry (YMCA)/ Blood Pressure	
5	10/1	9/25	9/19	9/20	Treadmill Ergometry (Ebbeling)	
6	10/8	10/2	9/26	9/27	Treadmill Ergometry (Ebbeling)	
7	10/15	10/9	10/3	10/11	Review	
8	10/22	10/16	10/10	10/18	EXAM I AEROBIC POWER/ ERGOMETRY	Project 1
9	10/29	10/23	10/17	10/25	Introduction: Anthropometry/ Body Composition	
10	11/5	11/6	10/24	11/1	BodPod/ Skinfolds	
11	11/12	11/13	10/31	11/8	BodPod/ Skinfolds	
12	11/19	11/20	11/7	11/15	Review	
13	11/26	11/27	11/14	11/29	EXAM II ANTHRO/ BODY COMP	Project 2
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