Midwestern State University



Department of Athletic Training and Exercise Physiology

EXPH 5023 – Advanced Exercise Physiology

Day and Time: Monday / Wednesday 11:00 am - 12:20 pm

Location: Room 223, D.L. Ligon Coliseum

Instructor: Brett Crossland, Ph.D.Email: brett.crossland@msutexas.edu

Telephone: 940-397-4956 **Office:** 208 Ligon Coliseum

Office Hours: M/W/F: 9-10:00 am, 12:30-1:30 pm; T/TH 08:00 - 9:30 am, 11:00 am -12:30 pm

Important Dates:

First Day of Class – Monday, August 25 Labor Day – Monday, September 1 (No Class) Last Day to Drop – Monday, November 24 Thanksgiving Holiday – November 26-28 (No Class)

Exam I - Wednesday, September 29 Exam II - Monday, November 3 Final Exam – Wednesday, December 10 (8:00 pm – 10:00 pm)

<u>Textbook</u>: No textbook is required for this course. All required reading materials will be provided via D2L by the instructor.

Course Objectives:

- 1. Explain the energy systems, energy transfer during exercise and how best to train these systems for maximum performance in the development of physical fitness and performance.
- 2. Describe the physiology of muscular contraction and the principles related to the development and maintenance of strength, muscular endurance and flexibility.
- 3. Describe the function of the respiratory and circulatory system during rest and during exercise.
- 4. Describe the function of the cardiovascular system including the associative factors and theories related to performance and preventative wellness.
- 5. Describe the physiological responses and adaptations to environmental changes at rest and during exercise.
- 6. Develop an understanding of sport training methods for strength, power and endurance and the physiological effects.
- 7. Describe hormonal regulation of exercise as it relates to metabolism and energy transfer.

Course Evaluation: Evaluation of the course material will be broken down between ten (10) laboratory assignments throughout the semester, one (1) research paper, and three (3) exams.

Exams will be in person and worth 50% of your overall grade. MAKE UP EXAMS WILL NOT BE GIVEN AFTER THE SCHEDULED DATE.

	Total: 600 pts	100%
C. Exams (3 @ 100pts each)	300 pts	<u>50%</u>
B. Labs (10 @ 20pts each)	200 pts	33%
A. Research Paper (1 @ 100 pts)	100 pts	17%

GRADING SCALE:

Grades will be assigned on the following points needed:

 $A: \ge 90.00\%$ ≥ 540 B: 80.00-89.99% 480-539 C: 70.00-79.99% 420-479 D: 60.00-69.99% 360-419

 $F: \le 59.99\%$ 359 pts and below

Attendance

Attendance at class is **compulsory** if you intend on performing well in this course. Attendance will be taken for each class period. If you are not feeling well, I encourage you to stay away from the classroom. Lectures will not be recorded so it is your responsibility to get notes from fellow classmates.

Beginning with your 3rd unexcused absence from class your final grade will be dropped one letter grade for each subsequent absence.

Classroom Policies: It is assumed that everyone enrolled in this course is here to pursue further knowledge in the area of human movement. The following list provides what will be expected by the instructor and should also be expected by the students:

- 1. Attendance in class is expected. If you will not be able to participate in a class session please notify the instructor PRIOR to your absence in a timely manner. Only those with excuses that are related to University events (academic, athletic, etc.) or religious purposes may make-up work. If you have an excused absence and will not be available for an exam (EXCLUDING the FINAL EXAM) you must take the exam PRIOR to your absence (NO EXCUSES!!).
- 2. Turn off all cell phones, pagers, and any other electronic devices before class begins. It is disrupting to other students, and disturbing to the instructor if these electronic devises are active during the class period.
- 3. If you have a question that was not answered during the class period please feel free to stop by my office or email me your question (see front page).
- 4. Neither academic dishonesty nor plagiarism will be tolerated and as such, disciplinary action will be issued in accordance with university guidelines.

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate

in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please see: http://www.mwsu.edu/studentlife/disability.

Tentative Course Schedule

Week	Date	Topic	Assignments
1	8/25	Class Intro / Muscle Physiology	
1	8/27	Muscle Physiology	Lab #1 - Due 8/31
2	9/3	Bioenergetics	
2	9/8	Bioenergetics	Lab #2 - Due 9/7
3	9/10	Bioenergetics	
3	9/15	Lactate	Lab # 3 - Due 9/14
4	9/17	Lactate	
4	9/22	What Limits VO _{2 max} ?	Lab # 4 - Due 9/21
5	9/24	What Limits VO _{2 max} ?	
5	9/29	EXAM #1	
6	10/1	Muscle Damage & Inflammation	
6	10/6	Muscle Damage & Inflammation	Lab # 5 – Due 10/5
7	10/8	Muscle Damage & Inflammation	
7	10/13	Anaerobic Training Methods	Lab # 6 – Due 10/12
8	10/15	Anaerobic Training Methods	
8	10/20	Anaerobic Training Methods	Lab # 7 – Due 10/19
9	10/22	Aerobic Training Methods	
9	10/27	Aerobic Training Methods	Lab # 8 – Due 10/26
10	10/29	Aerobic Training Methods	
10	11/3	EXAM #2	
11	11/5	Thermoregulation & Exercise	
11	11/10	Autonomic Control of Heart Rate	Lab # 9 – Due 11/9
12	11/12	Autonomic Control of Heart Rate	
12	11/17	Ventilation & Exercise	Lab # 10 – Due 11/16
13	11/19	Acid-Base Balance During Exercise	
13	11/24	Ergogenic Aids in Exercise	

15 15	12/3 12/10	Body Composition FINAL EXAM	
14	12/1	Body Composition	Research Paper Due 11/30
14	11/26	NO CLASS THANKSGIVING	

College Policies

Campus Carry Rules/Policies

Refer to: Campus Carry Rules and Policies

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.