



**Day and Time:** Monday / Wednesday - 12:00 - 1:20 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:** MWF - 9:00-11:30 am, TR - 9:30 - 11:00 am

**Important Dates:**

First Day of Class – Wednesday, January 22

Spring Break - March 10-14 (No Class)

Easter Break - April 17-18 (No Class)

Last Day of Class - May 8

Exam I - Monday, February 24

Exam II - Monday, March 31

Final Exam – Wednesday, May 14, 3:30-5:30 pm

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

**Course Objectives:**

1. Identify cellular and molecular mechanisms responsible for changes in physiological measures in response to exercise.
2. Understand how exercise effects are mediated and translated into specific cellular and subcellular alterations.
3. Gain an understanding of the effects of exercise at the cellular level including changes gene expression.

**Course Evaluation:** Evaluation of the course material will be broken down between five (5) article review 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.**

A. Article Reviews (5 @ 20 pts each)	100 pts	17%
B. Research Paper (1 @ 200 pts)	200 pts	33%
C. Exams (3 @ 100 pts each)	<u>300 pts</u>	<u>50%</u>
	<b>Total: 600 pts</b>	<b>100%</b>

## GRADING SCALE:

Grades will be assigned on the following points needed:

A: $\geq 90.00\%$	$\geq 540$
B: 80.00-89.99%	480-539
C: 70.00-79.99%	420-479
D: 60.00-69.99%	360-419
F: $\leq 59.99\%$	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.

**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!!**). Those individuals who do not have an excuse for an absence will receive a zero score for that day's evaluation. If you fail to inform the instructor in a timely manner of your absence, then any make-up work performed will be worth 50% of the original work.
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 devices 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	1/22	Couse Introduction	
2	1/27	The Cell	
2	1/29	Cellular Life Span	
3	2/3	Genes & Genetic Heterogeneity	
3	2/5	Exercise Phenotypes	
4	2/10	Proteins & Exercise	<b>Article Review #1 - Due 2/9</b>
4	2/12	Extracellular Matrix & Exercise	
5	2/17	Regulation of Intracellular Ions	
5	2/19	Regulation of Intracellular Ph	
<b>6</b>	<b>2/24</b>	<b>Exam #1</b>	
6	2/26	Inter & Intracellular Signaling	
7	3/3	Energy Turnover	<b>Article Review #2 - Due 3/2</b>
7	3/5	Substrate Utilization	
8	3/10	NO CLASS SPRING BREAK	
8	3/12	NO CLASS SPRING BREAK	
9	3/17	Reactive Oxygen Species	<b>Article Review #3 - Due 3/16</b>
9	3/19	Reactive Nitrogen Species	
10	3/24	Cellular Responses to Environmental Stress	
10	3/26	Cellular Responses to Environmental Stress Cont.	
<b>11</b>	<b>3/31</b>	<b>Exam #2</b>	
11	4/2	Exercise & the Cardiac Myocyte	
12	4/7	Exercise & Endothelium	<b>Article Review #4 - Due 4/6</b>
12	4/9	Skeletal Muscle Fiber Responses	
13	4/14	Exercise & the Alveolar & Bronchial Epithelial Cell	
13	4/16	Exercise and the Liver Cell	
14	4/21	Exercise and the Adipocyte	
14	4/23	Exercise and the Erythrocytes	
15	4/28	Exercise and the Leukocytes	<b>Article Review #5 - Due 4/27</b>
15	4/30	Exercise and the Brain	

16	5/5	The Molecular Athlete	
16	5/7	The Molecular Athlete Cont.	
	<b>5/14</b>	<b>Final Exam</b>	<b>3:30-5:30 pm</b>

### 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.

#### Generative AI Policy

This course assumes that work submitted for a grade by students – all process work, drafts, brainstorming artifacts, final works – will be generated by the students themselves, working individually or in groups as directed by class assignment instructions. This policy indicates the following constitute violations of academic honesty: a student has another person/entity do the work of any substantive portion of a graded assignment for them, which includes purchasing work from a company, hiring a person or company to complete an assignment or exam, and/or using generative AI tools (such as ChatGPT).