

Midwestern State University
Department of Athletic Training and Exercise Physiology
EXPH 5083 Science Behind Injury & Rehabilitation (3 Credit)
SPRING 2023

Instructor: Michael W. Olson, Ph.D.
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Office Hours: By appointment

Course Meeting Time: Online/Virtual

Important Dates:

First day of Class:	Tuesday, January 17
Exam I (midterm):	Thursday, March 9
Exam II (Final):	Thursday, May 4

Texts/Materials:

There will be no specified text required for the course. Relevant reading materials for each class session will be provided in the form of research articles and selected book chapters through Desire2Learn.

Course Description:

This online course is designed to develop knowledge regarding specific noted injuries (i.e., acute, chronic), theory and clinical application of injury rehabilitation and therapeutic exercise used for exercise physiologists to restore patients, clients, athletes and other physically active individuals to their pre-injury levels of fitness, strength, power, endurance and speed.

Course Objectives:

- Students will demonstrate through discussion and written evaluations the etiology and mechanisms of physical injury or trauma.
- Students will demonstrate through discussion and written evaluations the theoretical concepts, components and phases of a rehabilitation program.
- Students will demonstrate through discussion and written evaluations the indications and contraindications of therapeutic exercises, as well as the progress of the rehabilitation protocol.
- Students will demonstrate through discussion and written evaluations the process of implementing a therapeutic exercise protocol, assess the patients progress and make changes when needed to progress the recovery and return to activity.
- Students will demonstrate through discussion and written evaluation the role of surgery in the repair/modification of bone/tissue to facilitate the return of the patient to activity.

Course Evaluation:

Exam I	25%
Exam II	25%
Assignments	25%
Peer-reviewed Assignment	25%

Grading Scale: **A: ≥ 90 ; B: 89.99 – 80; C: 79.99 – 70**

Examinations:

There will be two examinations during the semester. The format of these examinations will be primarily essay incorporating material from previously presented readings/power points. Application questions may also be included to test each student's critical thinking. The exams will be worth 50% of the overall course grade.

Course Guide/Peer-reviewed Assignments:

A topical assessment will be provided for each unit of discussion. Students will be required to then search for relevant peer-reviewed research articles, read them, and post them to the Discuss Board along with at least three questions that are related to the article which must be answered by each member of the class (i.e., did the authors provide sufficient details for study replication?, what could the authors have done differently? - questions should be relevant to the methodology, results, and discussion points of the readings). Students will be provided one (1) week to search for pertinent information and another week to read each article and discuss the merits of each study. All materials presented can and will be used for the examinations, so you need to be prepared to really review each article carefully. You will be graded on two areas: 1) the peer-review article you chose and the follow-up questions you provide to your classmates, and 2) the quality of your responses to your classmates' postings.

Assignments from Instructor:

Selected readings from the literature will be provided weekly. It is the responsibility of the student to read each assigned article. For each reading/article, there will be a list of questions which need to be answered for credit to be awarded. The questions will be relevant to the methodology, results, and discussion points of the readings. The questions will be provided at the beginning of each week along with the corresponding articles. The answers to each of the questions will be due at the end of the respective week. Each assignment will be worth 20 points, while being worth 25% of the overall course grade.

Tentative Topics

The Etiology of Musculoskeletal Disorders and Trauma Overview

Trauma, Injury, and Pain in the Trunk and Neck

Mechanisms of Soft Tissue Damage and Rehabilitation

Common Lower Extremity Injuries and Rehabilitation

Common Upper Extremity Injuries and Rehabilitation

Grading Rubric:

The grading rubric will be used to assess the quality of the article posted, as well as the quality of the responses provided to a fellow student's article post. Articles do not have to be lengthy (i.e., over 10 pages) but should also not be too short (less than 5 pages). I encourage you to find articles that are challenging but not too overbearing, such as articles with an abundance of mathematics.

Article Posting (grading of the student posting the article):

1) Quality of the Article

5 – exceeds expectations, 4 – meets expectations, 3 – average expectation, 1 – does not meet expectation

2) Is the article within the scope of the topic area

5 – exceeds expectations, 4 – meets expectations, 3 – average expectation, 1 – does not meet expectation

3) Were the questions posed of enough quality to make further inferences to the merits of the article

5 – exceeds expectations, 4 – meets expectations, 3 – average expectation, 1 – does not meet expectation

Responses to Article (grading of peers/classmates):

1) Quality of each Response

5 – exceeds expectations, 4 – meets expectations, 3 – average expectation, 1 – does not meet expectation

2) Did the student sufficiently answer the questions posed in reference to the classmates' postings

5 – exceeds expectations, 4 – meets expectations, 3 – average expectation, 1 – does not meet expectation