



Course Syllabus: **MYOCARDIAL PHYSIOLOGY & ECG ANALYSIS**

College of Health Science and Human Services

EXPH 6013

Fall 2023, Monday 6-8:50pm, Online Lecture

Contact Information

Instructor: Dr. Frank B. Wyatt

Office: Ligon 209

Office hours: Tues. 7pm-8pm, Wed. 12pm-3pm, Thurs. 6am-7am

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Course Description

This class develops a foundation in myocardial physiology and electrocardiography (ECG) analysis at rest and during work. This includes myocardial function at rest, during acute stress, specific adaptation, ECG lead placement, rate and rhythm, ECG complexes and intervals, conduction disturbances, arrhythmia, ECG identification of myocardial infarction location, and drug effects on an ECG. In addition, heart rate analysis will include myocardial responses to exercise (both acute and chronic).

Textbook & Instructional Materials

None. Research articles, PowerPoint Lectures

Study Hours and Tutoring Assistance

NA

Student Handbook

Refer to: [Student Handbook 2017-18](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

COVID19 Procedures: Each class will be held as a hybrid consisting of face-to-face and Zoom lectures. It is the student's choice. However, labs are problematic if the student is not there. The labs will be on video for those not attending. If attending in person, ALL students will be required to wear a mask and distance.

Grading

Table 1: Points allocated to each assignment.

| Assignments | Points |
|--|--------|
| Exams (3) 2 @15 points each | 30 |
| Comprehensive Exam @ 30 pts | 30 |
| Article Discussions, Summations, outside classroom lab assigns | 40 |
| Total Points | 100 |

Table 2: Total points for final grade.

| Grade | Points |
|-------|--------------|
| A | 90-100 |
| B | 80 to 89 |
| C | 70 to 79 |
| D | Unacceptable |
| F | Unacceptable |

Course Structure

Each week a power point lecture on the myocardium, ECG or HR will be given. Following the lecture, either a laboratory experience with lab assignment or research article summation will also be part of the weekly work. ~~The lectures will be via Zoom (online) and the laboratory assignments will be assigned to be done outside of the classroom time and experience.~~

Exams

Two Exams are worth 15 total points toward your final grade. Exams will cover material over specific concepts associated with the course description. Each exam will only be over material between each exam. The final IS comprehensive and is worth 30 points toward your final grade. OF NOTE: exam material will come from both the lecture and the material covered in the laboratory sessions.

Projects Required

As noted in the grading system, there are points for article discussion, article summation as well as points for laboratory assignments. In addressing these three items as class projects:

- **Article Discussion and Summation: Periodically I will post a research article on D2L in PDF format. I will note that with this article, I expect you to read it and summarize the article. I will give you the format in class prior to the first assignment. ~~You will be given this article~~**

~~to read and summarize approximately five (5) days before our normal class meeting (Monday, 6-8:50pm) and will be notified that the summary in Word as an email attachment, will be due for the upcoming class meeting. Failure to turn in the article summary during that class period will result in zero (0) points for that assignment. In addition to summarizing the article, you will be expected to discuss the contents of the article for the class period for which it is due.~~

- Laboratory assignments will be given periodically. The assignments will specifically outline the procedures of the laboratory experience with specific investigative inquiry assigned pertaining to the content of that experience. ~~The format will be given and the assignment due date will be the next class meeting (Monday, 6-8:50pm)~~

Final Exam

The Final exam will be given at a specific date and time. There will be no alterations to this date and time. No one will be granted special times either before or after the noted exam date and time.

Extra Credit

None.

Late Work

Not accepted.

Make Up Work/Tests

Not allowed.

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential each and every class meeting. Classes where attendance is considered as part of the grade is EVERY class meeting.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. **Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into [D2L](#).

Instructor Class Policies

Class is every Monday from 6pm-8:50pm. We begin on time. Don't be late.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exist in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

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 go to <http://www.mwsu.edu/student-life/disability>.

College Policies

Ligon Colosseum is a NO CARRY building. Even concealed weapons are NOT allowed in this building.

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. **MSU campus is a no-tobacco CAMPUS. The aforementioned areas outside the location are OFF-CAMPUS.**

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.

Grade Appeal Process

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

| <u>Week Topic</u> | <u>Lab Experience</u> |
|---|--|
| 1 Introduction, myocardial anatomy, structure and function | Resting, Intro.to ECG, Lead Placement, ECG sinus rhythm, resting HR |
| 2 Myocardial Structure and function (contd) | ECG analysis during work related stress |

| | |
|---|---|
| 3 Electrical activity, contractile properties | Heart axis determination |
| 4 Exam 1 | |
| 5 Cardiac output | Exercise & ECG |
| 6 Myocardial adaptation & cardiac output | Alterations in ECG and Interpretation |
| 7 Vascular responses and the myocardium | Abnormal ECG analysis and interpretation |
| 8 Central & peripheral factors in CV control ECG, BP and pulse O₂ | |
| 9 Exam 2 | |
| 10 Heart rate and control during exercise | HR analysis during exercise |
| 11 Phases of HR response during exercise | HR, ECG analysis, contd. |
| 12 Heart rate threshold & cardiac drift | HR analysis during work |
| 13 Exam 3 Final Exam COMPREHENSIVE | |

- **Adjustments to the course content and grading scale may be used to ensure that a fair system is provided for the student's evaluation**
- **Plagiarism and cheating are serious offenses and may be punished by failure on the exam or lab assignment; failure of the course; and/or expulsion from the university.**
- **Any student with a disability who requires an accommodation or other assistance in this course should make an appointment to speak with me at the earliest convenience.**
- **Discussion in class is mandatory. However, grading of discussion is very subjective by the Professor. Simply put, if one is quiet throughout the class without becoming involved in the Discussion, they have NOT participated.**