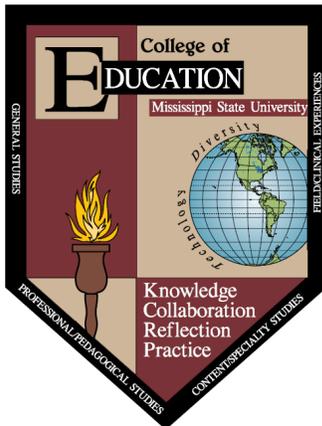


**MISSISSIPPI STATE UNIVERSITY  
COLLEGE OF EDUCATION**

**DEPARTMENT of KINESIOLOGY  
COURSE SYLLABUS**

<b>Course Prefix &amp; Number:</b>	EP 8243
<b>Course Title:</b>	Cardio-respiratory Exercise Physiology
<b>Credit Hours:</b>	Three (3) semester hours
<b>Course Type:</b>	Lecture
<b>Catalog Description:</b>	Prerequisite: EP 3304 or equivalent. Advanced principles of cardiovascular and respiratory physiology with special emphasis on the physiological responses of these systems to acute and chronic exercise.

**College of Education Conceptual Framework:**



The faculty in the College of Education at Mississippi State University are committed to assuring the success of students and graduates by providing superior learning opportunities that are continually improved as society, schools, and technology change. The organizing theme for the conceptual framework for the College of Education at Mississippi State University is educational professionals - dedicated to continual improvement of all students' educational experiences. The beliefs that guide program development are as follows:

1. **KNOWLEDGE** - Educational professionals must have a deep understanding of the organizing concepts, processes, and attitudes that comprise their chosen disciplinary knowledge base, the pedagogical knowledge base, and the pedagogical content knowledge base. They must also know how to complement these knowledge bases with the appropriate use of technology.
2. **COLLABORATION** - Educational professionals must continually seek opportunities to work together, learn from one another, forge partnerships, and assume positions of responsibility.
3. **REFLECTION** - Educational professionals must be willing to assess their own strengths and weaknesses through reflection. They must also possess the skills, behaviors, and attitudes necessary to learn, change, and grow as life-long learners.
4. **PRACTICE** - Educational professionals must have a rich repertoire of research-based strategies for instruction, assessment, and the use of technologies. They must be able to focus that array of skills on promoting authentic learning by all students or clients, while exhibiting an appreciation and commitment to the value and role of diversity.

## Course Objectives:

1. Students will be able to demonstrate knowledge (CFPO 1, 3, & 14) in the following areas:
  - Structure, function, and regulation of the pulmonary system
  - Acute responses and chronic adaptations of the pulmonary system to exercise
  - Structure, function, and regulation of the cardio-vascular system
  - Acute responses and chronic adaptations of the cardio-vascular system to exercise
2. Students will also effectively demonstrate an appreciation of physiological diversity between people (CFPO 2), inquiry and problem solving (CFPO 10), written and oral communication of empirical knowledge (CFPO 5, 6, 13, &14), use of technology (CFPO 7), collaboration (CFPO 9), and careful evaluation of peers (CFPO 1, 8, &11).

## Topics Covered in the Course:

1. Pulmonary Structure & Function (3 hours)
2. Gas Exchange & Transport (3 hours)
3. Dynamics of Pulmonary Ventilation (3 hours)
4. Essentials of the Cardiovascular System (3 hours)
5. The Heart as a Pump (6 hours)
6. Cardiac Myocytes (3 hours)
7. Electrical Activity of the Heart (3 hours)
8. Hemodynamics & Peripheral Circulation (4.5 hours)
9. Vascular Structure & Function (4.5 hours)
10. Cardiovascular Responses to Acute Aerobic Exercise (3 hours)
11. Cardiovascular Adaptations to Aerobic Training (3 hours)
12. Cardiovascular Responses to Acute Resistance Exercise (3 hours)
13. Cardiovascular Adaptations to Resistance Exercise Training (3 hours)

## Required Texts:

Smith, D. L., & Fernhall, B. (2011). *Advanced cardiovascular exercise physiology*. Champaign, IL: Human Kinetics.

McArdle, W. D., Katch, F. I., & Katch, V. L. *Exercise physiology: Nutrition, energy, and human Performance*. Baltimore, MD: Lippincott Williams & Wilkins.

**We will use only chapters 12, 13, & 14 from this text. These chapters are available through our library:** visit <http://library.msstate.edu/>; click on *RESEARCH*; select *Course Reserves*; look up items by entering the instructor's last name.

## Supplementary Materials:

Lecture outline slides and other materials will be made available on-line at <https://mycourses.msstate.edu>.

## **Methods of Instruction:**

Lecture; student presentations; presentation evaluations; discussion

## **Suggested Student Activities:**

1. Students will perform two presentations of published research in the area of cardio-respiratory physiology. The first will be performed by each student individually and the second will be given in partnership with another student. Obj 1-2
2. Students will evaluate presentations given by other students in the class. Obj 1-2
3. Students will also have opportunities to work cooperatively towards analyzing critical issues in cardio-respiratory physiology. Obj 1-2

## **MSU Honor Code:**

**“As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.”**

Any student engaging in cheating, fabrication, multiple submission, plagiarism, complicity, or other acts of academic misconduct will face the sanctions described in the Honor Code of Mississippi State University. These sanctions may include receiving an F to assignments or as a final grade. Here are some definitions from the Honor Code (section I.C):

- **Cheating:** Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise
- **Fabrication:** Making up data or results and recording or reporting them
- **Multiple Submission:** The submission of substantial portions of the same work (including oral reports) for credit more than once without authorization from the instructor of the class for which the student submits the work
- **Plagiarism:** The appropriation of another person's ideas, processes, results, or words without giving appropriate credit
- **Complicity:** Intentionally or knowingly helping, or attempting to help, another to commit an act of academic dishonesty

Information on the Honor Code of Mississippi State University can be found at:

<http://www.honorcode.msstate.edu/>

## **Technology:**

PowerPoint presentations; online videos and animations on cardiovascular physiology

## **Disability:**

Students who have a disability that requires any type of accommodation must see the instructor immediately. Students with disabilities as well as low income and first generation students should be aware that Student Support Services (662-325-3335) at MSU can support them in becoming successful academically. More information about Student Support Services can be found at: <http://www.sss.msstate.edu/>

## Diversity:

Diversity in this course will be addressed by examining how cardiovascular physiology varies as a function of sex, race/ethnicity, disability, and disease. Examination of these issues will be accomplished by lectures, readings, and student presentations.

**Field component:** None

## Evaluation of Student Progress:

Evaluation Type	Points Possible	Grading Scale	
Exam 1	100 pts	<b>A</b>	450 – 500
Exam 2	100 pts	<b>B</b>	400 – 449
Exam 3	100 pts	<b>C</b>	350 – 399
Two Presentations	2 × 50 = 100 pts	<b>D</b>	300 – 349
Article Summaries	60 pts	<b>F</b>	0 – 299
Presentation	20 pts		
Evaluations			
Participation	20 pts		
<b>Total Possible Points</b>	<b>500 pts</b>		

### Exams

Each of the 3 exams will include elements from lectures and readings, and they will NOT be cumulative. Expect challenging exams with multiple choice and True/False questions. Unless otherwise indicated, the exams will include elements from assigned readings that might NOT be covered during lecture. You will perform well on the exams only if you keep up with the readings and prepare appropriately. Students who miss an exam without a valid excuse will get a zero. Make-up exams can be administered at the discretion of the professor **ONLY IF**: a) the student has a valid excuse and b) the student contacts the professor **PRIOR** to the exam date.

### Presentations

**Each student will present 2 scientific papers describing original research.** The first presentation will be given individually by a single student, whereas the second will be given by a group of 2 students. Students may earn up to 50 points for each presentation. The grade for the group presentation will be the same for all group members. Papers will be assigned to students by the instructor. Specific timeline, guidelines, and grading criteria for this assignment will be provided during the semester. Please follow these guidelines to the point; failure to do so will affect your grade. To aid students in presenting their papers, the instructor will provide a sample presentation. Students who miss their presentation without a valid excuse will receive a zero.

### Article Summaries

All students must write a summary of each paper presented in class including the one presented by the instructor. Students are excused from submitting summaries for (a) the papers they will present, (b) 1 additional paper. Students should be aware that questions on exams will be drawn from ALL papers. Specific guidelines for writing these summaries will be provided by the

instructor. Summaries are DUE on the day of the presentation and students must submit them in person during class. Summaries cannot be submitted past the due date.

### Presentation Evaluations

Students can earn a total of 20 points by grading presentations by other students. The instructor will provide grading criteria. The number of points earned for grading each presentation will be determined once we know how many presentations will be performed. Students cannot earn any points if they miss a presentation. Students are allowed to miss 1 presentation during the semester. Students will NOT evaluate a presentation, if they come to class after the presentation has started. Students must pay FULL attention during presentations; those who fail to do so will NOT be allowed to participate in this process and they will NOT earn any points.

### Participation

Students may earn up to 20 points by class participation. These points will reflect **attendance** as well as the **quantity** and **quality** of contributions to the course as rated by the instructor.

## IMPORTANT

Students who miss deadlines for any of the assignments/exams of this class without a valid excuse will get a zero on that assignment/exam. If you have a valid excuse for missing an assignment/exam, you must inform the instructor by e-mail before the due date. **Written documentation of your excuse is due immediately** (e.g., evidence you were seen by a doctor, your boarding pass for an emergency plane trip). Vacation plans, out of town visitors, work-related issues, GRE, and assignments due in other classes are NOT acceptable excuses.

### **Bibliography:**

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