

**MISSISSIPPI STATE UNIVERSITY
COLLEGE OF EDUCATION**

**DEPARTMENT of KINESIOLOGY
COURSE SYLLABUS**

Course Prefix & Number: EP 4603

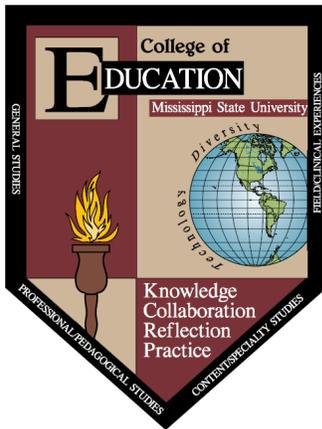
Course Title: Physical Activity Epidemiology

Credit Hours: Three (3) semester hours

Course Type: Lecture

Catalog Description: Survey of the health-related aspects of exercise, physical activity and physical fitness from the perspective of epidemiology. Biological mechanisms for healthy adaptations to physical activity are addressed. The behavioral determinants of physical and regular participation in exercise are reviewed.

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:

The student will:

1. Explain the basic concepts of epidemiology including risk factors, the disease process, epidemiological triad and its use in chronic disease, etc. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)
2. Identify the various types of epidemiological studies including: Prevalence, Retrospective (Case Study, Case Control), Prospective (Cohort), and Trials. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)
3. Demonstrate an understanding of pathophysiology of certain conditions such as coronary heart disease, cancer, stroke, diabetes mellitus, osteoporosis, arthritis, asthma, and high blood pressure. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)
4. Demonstrate an understanding of how exercise can modify the development of these pathological conditions. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)
5. Demonstrate an understanding of how risk factors such as cigarette smoking, poor dietary habits, and physical inactivity can contribute to certain diseased conditions. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)
6. Demonstrate an understanding of the importance of weight management in reducing risk of disease. (CFPO 1, 2, 3, 4, 5, 7, 8, 10, 13, 14)

Topics to Be Covered:

- Introduction (Chapter 1, 2, 3) (10 hours)
 - Intro to Epi
 - Terms and definitions
 - PA Epi History
 - Health goals for the nation
 - Research designs
 - Determining cause in Epi studies
 - Causal criteria
 - Measurement and surveillance
- PA and **disease mortality** (Chapter 4, 5) (6 hours)
 - All-cause/ CVD/CHD mortality
 - PA and CHD
 - Cerebrovascular disease and stroke
 - Descriptive epi on stroke
 - PA and stroke
- PA and **risk factors** (Chapter 6, 7, 8) (11 hours)
 - Hypertension
 - Scope of the problem
 - Etiology and treatment
 - Role of PA

- Hyperlipidemia
- Scope of the problem
- Etiology and treatment
- Role of PA
- Obesity
- Scope of the problem
- Etiology and treatment
- Role of PA

- PA and **chronic disease** (Chapter 9, 10) (**6 hours**)
 - Diabetes
 - Scope of the problem
 - Etiology and treatment
 - Role of PA
 - Osteoporosis
 - Scope of the problem
 - Etiology and treatment
 - Role of PA

- PA and cancer and immunity (Chapter 11, 12) (**3 hours**)
 - Cancer
 - Scope of the problem
 - Etiology
 - Role of PA in specific cancers
 - Immunity
 - Scope of the problem
 - Role of PA
 - Monocytes, granulocytes, and natural killer cells
 - Cytokines

- PA and Mental health (Chapter 13) (**3 hours**)
 - Depression
 - Scope of the problem
 - Etiology and treatment
 - Role of PA
 - Anxiety
 - Scope of the problem
 - Etiology and treatment
 - Role of PA

- Adopting and maintaining a physically active lifestyle (Chapter 16) (**6 hours**)
 - Barriers to PA
 - How do people decide to be active
 - Environmental intervention and self-regulation
 - Intervention settings
 - Levels of intervention
 - Effectiveness of PA interventions
 - Recommendations for community interventions

- Mediators of PA interventions

Required Text:

Dishman, R.K., Washburn, R.A., Heath, G.W. (2004). *Physical activity epidemiology*. Champaign, IL: Human Kinetics.

Methods of Instruction:

The majority of this class will be devoted to lectures. Power Points and module assignments will be used to support the lectures. There will be assignments in the field of study to be conducted by the student and skills to be practiced during class. There will also be *Blackboard* assignments to be submitted periodically.

Suggested Student Activities:

1. Be prepared to join in class discussions concerning epidemiology and physical activity and review current articles. (Objectives 1-14)
2. Maintain a professional behavior. (Objectives 1-14)
3. Retrieve, review, and have a working knowledge of professional research regarding health issues. (Objectives 10-14)
4. Successfully complete all assignments, presentations and tests throughout this course. (Objectives 1-14)

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.”

Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code. For additional information please visit: <http://www.msstate.edu/dept/audit/PDF/1207.pdf>

Cellular Phones: It is expected that students will show respect for the instructor as well as their peers by turning off their cellular phones before entering the classroom.

Technology:

All course information (i.e., lectures and assignments) will be made available on myCourses. Likewise, PowerPoint will be used for lecture material. When possible, other modes of technology (e.g., skype sessions with various experts in the field) will be used to enhance course material.

Diversity:

It is important to help students understand the significance of the diverse learner. We will address professionalism and how to help individuals or groups who are diverse in age, disability, ethnicity, gender, race, sexual orientation, socioeconomic class, and other characteristics. We will address these issues in our topics to be covered.

Disability:

Students requiring accommodation for a disability should inform the instructor as early in the semester as possible to discuss needs and an accommodation strategy. All possible accommodations will be made in accordance with university policy and cooperation with Student Support Services (662-325-3335) when applicable.

Field Component: None

Evaluation of Student Progress:

The grade for each student is based upon:

A.	Written exams (4)	400 points
B.	<u>Assignments</u>	<u>100 points</u>
		500 total points

Exams: There will be three exams during the semester that will be announced at least one week before the exam. There will be a final exam during finals week. Format of exams may include multiple choice, matching, fill-in-the-blank, and short answer questions.

Late and Missed Exams:

Any student late for an exam will not be allowed to take the exam after the first person has finished. Any student missing an exam **must inform the instructor in advance** and submit an acceptable written excuse to the instructor the first day of return. Failure to submit a written excuse with proper documentation, or failure to make up the exam will result in a zero for the exam.

Acceptable absences include, but are not limited to: participation in an activity appearing on the university's authorized activity list; death or major illness within the student's immediate family, religious observance; and, personal sickness that is too severe or contagious for the student to attend class as determined by the Health Center or off-campus physician.

Assignments: There will be 100 points of assignments to be completed during the semester. These assignments will correspond to the course information being covered and may be designed to be completed in class or outside of class. In-class assignments follow the 'must be present to win' guidelines. Students must be in attendance to receive and complete these assignments. No make-ups will be allowed. These assignments will correspond to the course information being covered.

Late Assignments: Assignments are due at the beginning of class. Assignments turned in at end of class will be considered late. Do not do homework during class. Failure to complete and turn in an assignment on time will result in a grade reduction for that assignment of 10% every day that it is

late. Failure to complete an assignment will result in a zero for the assignment. You must be present in class to complete the in-class assignments.

Attendance: Class attendance and participation is expected for all classes. Students who will be representing the University in an official documented capacity should see the professor at the beginning of the semester.

Grading Scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = 59% or less

This scale will not be curved, but will be supplemented by unannounced, in-class extra credit quizzes that could add an extra 4-5% to attending students' point totals. (Expect 6-7 pop quizzes of about 2-4 points each.) These quizzes follow the 'must be present to win' guidelines as well. Students must be in attendance to take quizzes. No make-ups will be allowed. *Also, no extra time will be allotted if you are late to class on a quiz day.*

Bibliography:

Egan, C., Deering, B., Blake C., Fullen, B., McCormack N., Spruit M., & Costello R.(2012). Short term and long term effects of pulmonary rehabilitation on physical activity in COPD. *Respiratory Medicine.106(12):1671-9.*

Elsevier Health Sciences. (2010). The Framingham Heart Study -- global impact, ongoing influence. *ScienceDaily.*

Friedenreich, C. & Orenstein, M. (2002). Physical activity and cancer prevention: Etiologic evidence and biological mechanisms. *The Journal of Nutrition, 132, 3456–3464.*

Iwamoto, J. (2013) Effects of physical activity on bone: What type of physical activity and how much is optimal for bone health? *Journal of Osteoporosis, 1, 1-3.*

Morris, J.N., Heady, J.A., Raffle, P.A.B., Roberts, C.G., and Parks, J.W., (1953). Coronary heart disease and physical activity of work. *Lancet 265, 1111-1120.*