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School of Public Health

Course Number: PUH 690

Course Title: Energetics: Scientific Foundations of Obesity and Other Health Aspects

Credit Hours: 3

Course Offering: Spring 2014

Course Instructor(s): David B. Allison, PhD

Office Hours: On Mondays by appointment.

E-mail: Dr. Allison will check email daily and you can expect a response within 24 hours.

Preferred Method of Contact: UAB email: dallison@uab.edu.

Course Time: Friday 1:00-3:30 pm

Introduction to the Course: Energetics may be defined as the study of the causes, mechanisms, and consequences of the acquisition, storage, and utilization of metabolizable energy by biological organisms. Understanding these processes is critical to the understanding of ecology and evolution and has implications for public health.

Prerequisites: A bachelor's degree.

Description and Purpose: To acquaint individuals doing scholarly work related to obesity with the fundamental principles of energetics and their applications, and to use those in assessing the causes and treatment of obesity.

#### Learning Objectives/Competencies Alignment

The following competencies were taken from the Association of Schools of Public Health MPH Core Competencies. At the completion of this course students will be able to do the following (specifically as they relate to obesity):

- Utilize the logic and language of scientific methods in public health and other life sciences research.
- Identify key sources of epidemiologic data.
- Interpret epidemiologic data with regard to bias, confounding, and precision.
- Describe the importance of epidemiologic data as a basis for

- public health interventions for disease control.
- Identify the causes of social and behavioral factors that affect health of individuals and populations.
- Describe the role of social and community factors in both the onset and solutions of public health problems.
- Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions.
- Apply ethical principles to public health program planning, implementation and evaluation.

System Requirements: Microsoft Office and Internet access required.

Online Delivery System (Course Platform): None.

Course Policies and Procedures: The final term paper should be submitted through emailed to the professor) by the specified due date.

Time Requirements/Commitment: This is a 3 credit hour course; you should therefore anticipate in addition to the 2.5-hour class every week spending approximately 2 hours of study time per lecture hour. Therefore, you should expect to spend an additional 5 hours a week reading, studying notes, and working on assigned projects and/or papers.

Required Reading/Course Materials: To be determined and assigned well in advance (1 week minimum) before the lecture.

Class Format: Each class period will consist of didactic lecture for the first half of the class, followed by discussion of the required reading lead by an assigned student.

Course Content: This course will cover a variety of topics related to energetics including an overview of obesity, human eating behavior, human energy metabolism, the role of energetics in ecological systems, public health approaches to influencing obesity, experimental design and statistical issues, animal models for the study of obesity, sociological and ecological modeling, mathematical modeling of energy balance, and the measurement of energy expenditure during exercise, food intake, and body composition.

Grading:

- i. Proctoring Policy: A multiple-choice midterm will be taken in class in the presence of a proctor.
- ii. Formatting for Assignment submissions: All submitted assignments must follow APA style (or the accepted publishing format for that division). Files that are

submitted should be named (first initial and last name and abbreviated assignment name-e.g. JSmithAssgn1).

- iii. Participation standard: Students are required to attend each lecture and lead one discussion of the weekly reading.

Grading Scale: On a traditional grading scale, 40% of students' grades will be from the multiple-choice midterm, 40% from the final term paper, and 20% from participation.

#### Incomplete Grades:

The UAB Incomplete Grade Policy states that a temporary grade notation of "I" for incomplete may be requested by the student prior to the end of the term and submitted at the course master's discretion due to unforeseen circumstances that effect the student's ability to complete course requirements. Students requesting consideration of an "I" grade must discuss with the course instructor, and agree upon a plan and a schedule for, completion of course requirements. It is the student's responsibility to initiate this discussion, assure completion of this form and return it to the Office of Student and Academic Services. If no permanent grade is reported by the end of the subsequent term, an "F" will be automatically assigned to replace the "I". Extension of "I" grades may be granted only upon written request of the course instructor to the associate dean for academic affairs. Here is the web link for SOPH Incomplete Grade Request Form: <http://www.soph.uab.edu/media/osas%20forms/I%20grade%20form.pdf>

#### Policy on late assignments:

**Late assignments will not be accepted.**

#### Accessibility:

Any student with a disability that may need accommodations in order to successfully complete all requirements of (this) course should call the Office of Disability Support Services, at 205-934-4205. This office is responsible for registering students and in ensuring the University's compliance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Once registered, this office will then inform faculty members of all courses in which the student is enrolled of the student's status and the specific nature of any accommodations required. Any student requiring such accommodation should discuss this with the course master and assure that the appropriate correspondence is sent from the Office of Disability Support Services.

#### Honor Code:

As a student in the School of Public Health, you are subject to the [SOPH Student Honor Code](#). You are responsible to understand the contents of the Honor Code and to abide by it. Academic Dishonesty: Plagiarism is the undocumented use of other authors' words, texts, images, and ideas that don't come from your own head. Making up sources, altering numbers, statistics, or just a few words of a

document is considered plagiarism. Poor documentation or paraphrasing of a source is also considered plagiarism. Plagiarism in this course is taken seriously; any violations will be punished to the full extent allowable under the SOPH Honor Code. All assignments will be submitted through the Turn-It-In system to document the originality of your contributions to the class.

Note: Instructors reserve the right to make changes to the syllabus **or course content** at any time. **It is your responsibility to check email often for changes in assignment requirements, due dates, and materials.**

Course Calendar:

Date	Topic	*Readings	*Activities/Due Dates
January 10, 2014 David B. Allison, PhD	Introduction & Overview of Energetics	TBA	
January 17, 2014 Tonia Schwartz, PhD & Michael Sandel, PhD	Energetics & Ecology	TBA	
January 24, 2014 Douglas Moellering, PhD	Overview of Energetics at a Molecular Level	TBA	
January 31, 2014 Emily Dhurandhar, PhD	Regulation of Human Energy Intake	TBA	
February 7, 2014 Gordon Fisher, PhD, Barbara Gower, PhD & Timothy Nagy, PhD	Measurement of Energy Expenditure and Body Composition	TBA	
February 14, 2014 Ed Archer, PhD & James Shikany, DrPH	Measurement of Food Intake	TBA	
February 21, 2014	Midterm Exam		
February 28, 2014 Kevin Fontaine, PhD	Expectancy & Design Issues in Obesity Research	TBA	
March 7, 2014 Daniel Smith, PhD	Animal Models in the Study of Obesity	TBA	
March 14, 2014 Kathryn Kaiser, PhD	Public Health Approaches to Obesity	TBA	
March 21, 2014 Gregory Pavela, PhD & Dwight Lewis, PhD	Sociological & Econometric Modeling	TBA	
April 4, 2014 Diana Thomas, PhD	Mathematical Modeling Approaches to Obesity	TBA	
April 11, 2014 John Dawson, PhD	Statistical Considerations in the Study of Obesity	TBA	
April 18, 2014	In-class writing and consultation time		<b>Final Term Paper due 12:00 Midnight April 21'</b>

