

**Dept.:** AHS

**Course No.:** AH 1030/NUSC 1030

**Title:** Interdisciplinary Approach to Obesity Prevention

**Contact:** Valerie Duffy

**Content Area:** CA3

**Credits:** 3

**Catalog Copy:**

AH 130(1030) Interdisciplinary Approach to Obesity Prevention.

(Also offered as NUSC 130(1030). Spring semester. 3 Credits. Open to freshman and sophomores in the Honors Program.

Explores the 1) biology of obesity including genetic predispositions and behaviors that increase obesity risk (dietary, physical activity, social, psychological), 2) the obesigenic environment, including how communities are physically built, as well as the economic relationship to obesity risk, and 3) policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy will be considered.

NUSC 130(1030) Interdisciplinary Approach to Obesity Prevention.

(Also offered as AH 130(1030). Spring semester. 3 Credits. Open to freshman and sophomores in the Honors Program.

Explores the 1) biology of obesity including genetic predispositions and behaviors that increase obesity risk, 2) obesigenic environment influencing our food supply and opportunities for physical activity, and 3) policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy will be considered.

**Justification:**

a) The proposal for this course was accepted by the University Honors Program to accomplish the following objective as stated in the request for proposals for the Honors Interdisciplinary General Education courses. Please see the attached proposal solicitation from the Honors Program. The proposal of Drs. Duffy and Rodriguez was accepted. Please find the course proposal and conformation information attached.

b) The course is appropriate for inclusion at 1000 or 2000 level as it is intended to be introductory, exposing students to an overview of the potential causes of and prevention efforts needed to address the obesity epidemic. The delivery of the curriculum will be tailored to the mix of honors students so that it can appeal to those with different types of educational backgrounds and interests. Valerie Duffy will have taught 2 semesters of INTD 198 to freshman honors students (Fall 06/07) to provide background for curricular engagement at the 1000/2000 level.

c) For both Departments, the course would compliment existing course offerings while meeting the new requirements of the Honors Program. Honors students would need to take Honors Interdisciplinary General Education course as a requirement for the sophomore honors certificate. The fellowship support from the Honors Program has been used to release faculty from some of the usual teaching load for the semester offered.

d) Effect on other departments—A similar course is not currently offered by other Departments, especially that would meet the general education requirements for Honors students.

e) Amount of overlap with existing courses. A review of the undergraduate graduate catalog reveals no overlap with existing courses. The proposed course would compliment the existing courses by providing an interdisciplinary introduction to a public health problem.

f) Other departments consulted. This course was developed in collaboration with nutritional sciences.

g) Effects on regional campus. The course will be offered on the Storrs campus. h) Specific costs approved by Dean None

i) Cross-listing. This is an explicitly interdisciplinary course and will be cross-listed with NUSC.

### **Meets Goals of General Education :**

- Acquire critical judgment and a working understanding of the processes by which they can continue to acquire and use knowledge: Students will learn to develop a hypothesis on a topic area concerning risks of energy imbalance and prevention of obesity. They will utilize peer-reviewed scientific resources to explore and arrive at an evidence-based summary to address the hypothesis. Through this process and interactions with course content, they will learn the components of an original research paper and the peer-review process. Special attention will be paid to examining a topic using different experimental approaches (in vivo, in vitro, animal, observational, epidemiological, clinical trial, randomized control) and critically evaluating the level of agreement across the approaches in formulating an evidence-based summary. Students will be encouraged to evaluate evidence about their topic areas as it relates to evidence of colleague's topic areas in order to develop an integrated approach to obesity prevention. This framework for using scientific evidence can be used in the future to formulate conclusions that can help acquire and apply newly founded information to address complex issues.

Acquire awareness of their era and society: Students will utilize the web-based materials to examine population statistics on changes in obesity prevalence over time, in different regions of the United States and globally. They explore demographic, socio-cultural, economic, food patterns, and work/physical activity characteristics of these regions. They will examine scientific literature on changes in the environment, food supply, economy and other factors associated with the change in obesity prevalence.

Acquire consciousness of the diversity of human culture and experience: There can be disagreement between the biological definition of obesity and what is acceptable culturally and personally. Students will explore cultural differences in acceptance of variation in weight by examining their implicit attitudes following the pioneering work of Mahzarin Banaji and by reviewing scientific literature. Risk of obesity varies with ancestry and region within the United States. Obesity prevention efforts need to address cultural differences in the meaning of food, appreciation of traditional medical versus complimentary medical approaches, and personal versus public health efforts to decrease risk of obesity. Students will explore and contrast geographic regions with high levels of obesity as well as examine scientific literature, which speaks to how this risk is influenced by genetic predisposition, environmental influences, and access to healthful foods and environments that support enjoyable physical activity. They will debate on approaches to cover the costs of obesity prevention including governmental support, insurance, schools, employers, and individual.

### CA3 Criteria:

Mission – The course addresses the mission by:

1. 2) exposing students to research studies for scientific thought and hypothesis testing through reading and discussing scientific literature, dissecting components of scientific papers, writing a hypothesis-based paper and group project.
2. 3) Learning and applying scientific terminology, inquiry and technological advances to the study of obesity as a chronic health condition and major public health problem.

1. Explore an area of science or technology by introducing students to a broad, coherent body of knowledge and contemporary scientific methods.

This course introduces the broad area of obesity risks and models of prevention. It uses an interdisciplinary approach introducing students to obesity risk and prevention related to field such as genetics, psychology, sociology, metabolism, economics, epidemiology, medicine, public health and public policy. Students base their evidence summaries of topic areas from the peer-reviewed, scientific literature.

2. Promote an understanding of the nature of modern scientific inquiry, the process of investigation, and the interplay of data, hypotheses and principles in the development and application of scientific knowledge. Students will learn to dissect a peer-reviewed, original contribution to the scientific

literature including review of past discoveries, statement of aim/hypothesis, experimental approach, methods, general description of the results and statistical approaches, summary of findings, limitations, and application (generalizability). Summary of the evidence would evolve from examining the scientific literature from a variety of experimental approaches, with the highest level of scientific evidence coming from randomized clinical trials. It is important for the student to realize that evidence can come from basic science but that the utility of this evidence must be tested under the highest level of scientific discovery for it to be applicable to addressing the obesity problem. The student can apply this framework to evaluate claims about obesity risk and prevention within the media.

3. Introduce students to unresolved questions in some area of science or technology and discuss how progress might be made in answering these questions. The primary causes of risk of obesity and best approaches to prevent this chronic condition are debated. Students will discover this through participation in lectures, with peers and self-exploration of the scientific literature. Most experts believe that a multi-component approach that broadly considers the environment while at the same time more narrowly considers the individual, including genetic predisposition and cultural beliefs, will be most successful to preventing obesity. More often than not, a single approach is used (eg, teach student about healthy eating, but not address access to physical activity). Throughout the course, students will learn that their individual topic area must be considered within the context of other approaches to work with their peers to formulate a broad approach to obesity prevention and how this approach might be evaluated for impact on obesity risk.

4. Promote interest, competence and commitment to continued learning about contemporary science and technology and their impact upon the world and human society. The increase in rates of obesity have been widely publicized and it is hoped that students seeking this class will have been exposed to the publicity and also have an interest in health from a variety of approaches or fields. Competence in identifying, reading, comparing and evaluating the scientific literature will be developed through the course, first starting at the introductory level and advancing through the semester based on participation, group work, assignment and interactions with faculty and guest lecturers. It is hoped students will apply the framework for uncovering and applying scientific evidence to solve a complex problem to questions throughout their academic career including their courses and honors projects. The interdisciplinary approach will demonstrate the breadth of scientific methods to addressing obesity and could pique their interest in working on this problem or in any of the disciplines presented. Students will gain an appreciation of the personal, economical and societal costs of growing rates of obesity including loss of quality of life, decreasing productivity, and the costs of prevention and treatment.

### **Science and Technology Learning Goals**

- 1) Students will know the basic concepts of nutrition and physical activity in the context of the biological and social sciences (i.e., public health) and as applied to the study of obesity.
- 2) Students will learn about contemporary scientific method as it applies to advances in understanding health. This includes the continuum of scientific method from the study of disease (case study, observation, migration study, cohort, randomized controlled trial) to

understanding mechanisms of obesity and obesity prevention (in vitro, in vivo, clinical, intervention).

3. 3) Students will be able to apply the scientific method toward the study of risks and methods of preventing obesity.
4. 4) Students will apply the scientific method to distinguish between science and pseudoscience as it applies to weight loss strategies.
5. 5) Students will describe a scientific experiment and the steps of the scientific investigation in written form as it applies to their individual topic related to obesity and obesity prevention.
6. 6) Students will be exposed to unresolved scientific questions and the need for further scientific investigation throughout the course readings and discussions.
7. 7) Students will discuss ethical issues as relevant to using technological and scientific advances in obesity prevention.

### **Science and Technology Learning Objectives**

1. 1) a) As evidenced in class discussions, portfolio entries, written assignments and testing, students will be able to correctly describe basic concepts of nutrition and physical activity at the biological and public health level as it applies to the study of obesity.  
  
b) Students will be able to state the risk versus benefits of false versus scientifically derived claims to improve weight-related health and quality of life.  
  
1. 2) a) Students will be able to describe and rank the levels of scientific inquiry in the study of obesity risks and consequences.  
  
b) Students will be able to identify the uses of scientific investigation toward increasing the understanding of causes of obesity.  
  
1. 3) Students will demonstrate the application of the scientific method through analysis and comparison of studies into obesity risk and comparison including evaluation of the aims, methods, results, discussion, implications and limitations.  
2. 4) Through a science-based evaluation, students will demonstrate via written portfolio entry an evaluation of a scientific claim for weight loss available to consumers.  
3. 5) Through written paper, students will describe a scientific experiment and the step of the scientific investigation as it applies to their individual topic related to obesity and obesity prevention.  
4. 6) Students will be to identify unresolved scientific questions through the scientific studies they include in their topic papers and through recall of class discussion on topics applied to obesity prevention.  
5. 7) Students will be able to discuss the risk versus benefits of technological advances in obesity prevention (eg, genetic risk of obesity) as well as ethical issues in setting policies for obesity management and prevention.

**Supplementary Information:** Please see the attached Honors Program request to develop the interdisciplinary general education courses and the approved proposal by Valerie Duffy and Nancy Rodriguez.

Lecture:           Lecture

Lecture Hours:     1.5

Primary Component 1:   YES

Graded Component 1:   Y

Section Size 1:     18

Discussion:         Discussion

Discussion Hours:     1.5

Graded Component 3:   N

Section Size 3:     18

Research Paper (10 pages in the final form)

**Purpose:** 1) To identify an issue related to obesity that integrates with the team project, research the current literature, and synthesize this information into a cohesive paper; 2) to present the issue using scientific writing and proper citation of primary references; 3) to demonstrate clarity, appropriate grammar, punctuation, paragraph structure, logical flow of information, source integration and reference format. The paper must follow the argumentative style described by Sarah Hamid ([owl.english.purdue.edu/workshops/hypertext/ResearchW/index.html](http://owl.english.purdue.edu/workshops/hypertext/ResearchW/index.html)) and the format of scientific writing ([owl.english.purdue.edu/handouts/research/index.html](http://owl.english.purdue.edu/handouts/research/index.html)).

Audience: Professionals who need to base practice on critical synthesis of the scientific literature.

Format: The final written paper will be 10 pages (1" margins, paginated) that includes:

- a title and title page;

- introduction with the research question/hypothesis and summary sentence(s) that tells the reader what the paper will cover;
- headings and subheadings that the reader can follow and frequent summaries after major subheadings or headings;
- recommend including, as an appendix, figures or tables with the appropriate citation, headings/figure legends (the goal is to make the table or figure have enough information so it can stand alone) and reference to the figures or tables within the text of the paper.
- integration with other student papers – making connections between areas of research to allow multi-dimensional understanding of a complex problem such as obesity.
- conclusion of the paper and implications for community and public health (eg, policy changes, new interventions, new practice guidelines)
- citation of every statement in the paper that is from a source (the guideline is to over vs. under cite references) and then a citation list that follows the science-medical style (ie, numbered). You must use primary referencing in your paper (eg, reference the journal that reports the study that found that a 60% total fat diet increases risk of cardiovascular disease, not the nutrition text or website that describes the finding). Number references consecutively in the order they are mentioned in the text. Identify references in text, tables, and figure legends by Arabic numerals in parentheses; do not use superscript numbers. References cited in tables or legends should be numbered in the order in which a table or figure is presented in the manuscript.
- do not rely just on article available on the Internet. Use the library (Storrs campus and the Health Center) for journals. Do use national statistics such as those found during the community assessment laboratory and project.

### **Course Information:**

This honors course takes an interdisciplinary approach to obesity, a complex public health problem while addressing the Science & Technology as well as Diversity & Multiculturalism general education requirements at UConn. Too often complex health problems are addressed unidimensionally or with a “Band-Aid” solution, looking for that “silver bullet,” the new fad diet or way to burn fat. Instead, this course will offer introduction to biological, psychological, Socio-cultural, economic, environmental and political factors that influence the balance and imbalance of energy consumption and energy expenditure. From a biological perspective, we will consider energy consumed through foods and beverages and that expended through normal body functions and physical activity with some exploration of genetic influences on energy intake/expenditure. The deceptively simple energy equation (ie, just eat less and you’ll lose weight) will be developed to consider psychological, cultural and economical influences on what we like and chose to eat and whether or not we are physically active. The course will continue on the role

that the environment—foods available, opportunities for enjoyable physical activity—and policies that govern the environment have on risk of obesity. Examination of models of obesity prevention will promote a synthesis of that individual factors contributing to obesity risk into multidimensional efforts to facilitate healthy behaviors at the individual, organizational, and community levels.

Format: The entire class will meet on Wednesdays with all students, both instructors, and teaching assistants. These group meeting will involve presentation of material by the instructor or guest lecturer. All students are responsible for the content of these group meetings. On Mondays, students will meet in sections for smaller discussions and more engaged participation. The content across the sections will be similar, addressing the more individualized needs of the student groups and reinforcing the content required for the CA3 and CA4 general education requirements. Students will form teams of six students each taking the broad areas of energy consumption and energy expenditure from an individual, community and national policy perspective.

Throughout the semester, the teams will work individually, culminating in team presentation and overall group synthesis.

#### Class Resources:

- The instructors are working with McGraw-Hill Publishing Company to specially design a text for this course pulling from the range of existing textbooks they publish. This text will allow interdisciplinary coverage of obesity prevention while assuring meeting the science and technology issues as well diversity and multiculturalism issues.
- The text will be supplemented with current scientific resources from the National Library of Medicine as well as from government agencies (eg, Centers for Disease Control, World Health Organization) that provide valuable materials on obesity public health and prevention efforts.

Course Evaluation: Students will be evaluated as follows:

Portfolio, 30%: Students will develop the portfolio throughout the semester based on reflections on readings, assignments, and application of information.



- As part of this portfolio, students will explore the varieties of human experiences, perceptions and thoughts regarding the medical definition of obesity by researching a geographic region of the country or world that has high rates of biologically-defined obesity. By use of the Internet, scientific literature, media and professional contacts, they will uncover information about the changes in the rates of obesity in the geographic area, the food environment and customs, work and physical activity, demographic information (including income and education), public perceptions of the condition, and public health goals and actions to address this health concern. Students will also explore and reflect on their own attitudes toward obese individuals as well as acknowledge and discuss ethical issues regarding obesity and obesity prevention.

- Also, as part of the portfolio and themed around the individual contribution to the group project, each student would select a topic and expand it beyond the introduction in the classroom, and write a 10-page hypothesis-based paper.

Team Project, 30%: Each student will be a member of a team of six that will develop content on an area of obesity risk involved with energy intake and energy expenditure and an overall “consensus approach” how to address this problem for obesity prevention. The instructors will evaluate the team project on: • how each individual student topic is integrated into the team project • the team process (meeting times, • the team PowerPoint presentation and consensus • how the team consensus approach is integrated conceptually with that of the other teams in the class.

Class Participation/Preparedness, 20%: Much of the grade will be based on mini-class presentations and discussion in class and WebCT in which students compare and contrast their geographic areas with others in the class for differences as well as similarities among diverse groups. Bringing in current news or readings on class topics, generation of questions for discussion, and participation in the sections will also be considered.

Cumulative Final, 20%: Students would be tested on their ability to apply the general scientific concepts discussed each week. This final would test their overall knowledge of acquired science principles.

Content Outline and Syllabus (with Gen Ed content areas listed as CA3 and/or CA4)

I. Obesity—introduction and definitions; uncovering and evaluating scientific evidence; group work (3 lectures, multiple sections)

a. Self-assessment on areas of project related to obesity causes/intervention

b. Project group assignment based on self-assessment, interest and to build inter-disciplinary teams.

1. 1. Learning skills – effective Internet searching

2. 2. Learning skills — evaluating the accuracy, currency, authority and potential bias of web-based information
3. 3. Learning skills – using PubMed to uncover scientific papers (CA3)
4. 4. Project work — identifying individual topics and refining group projects
5. 5. Project work — working as an effective team
6. 6. Using PubMed to uncover research articles for individual topic (CA3)  
www.nlm.nih.gov/bsd/disted/pubmed.html
7. 7. Dissecting a research article (CA3)
8. 8. Paraphrasing and summarizing a research article (CA3)
9. 9. Orally presenting research paper findings (CA3)

### c. Definitions

1. 1. Biological definitions (CA3)
  1. a. Overall adiposity
  2. b. Central adiposity
  3. c. Body fat measures
  4. d. Lab-based measures (skin folds, bio-electrical impedance, underwater weighing, densitometry, MRI)
  5. e. Screening measures for nutritional surveillance
    1. i. Children
    2. ii. Adults

### Readings/Discussion:

Shen W, Wang Z, Punyanita M, Lei J, Sinav A, Kral JG, Imielinska C, Ross R, Heymsfield SB. Adipose tissue quantification by imaging methods: a proposed classification. *Obes Res.* 2003 Jan;11(1):5-16. Review.

Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults. [www.nhlbi.nih.gov/guidelines/obesity/ob\\_gdlns.pdf](http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf)

Growth charts for children – CDC interactive:  
www.cdc.gov/nccdphp/dnpa/growthcharts/index.htm

Ricciardi R, Talbot LA. Use of bioelectrical impedance analysis in the evaluation, treatment, and prevention of overweight and obesity. J Am Acad Nurse Pract. 2007 May;19(5):235-41. Review.

Textbook reading

Anthropometry – Interactive

- Height, weight, waist circumference
- Bioelectrical impedance, skin fold
- Self assessment

[www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/risk.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm)

1. 2. Functional definitions (eg, function in job, society, self-esteem, cultural group) (CA4)
  1. a. Role functioning
  2. b. Social
  3. c. Psychological
  4. d. Socio-Cultural

d. Risk and rationale for studying

1. 1. National trends in overweight/obesity (CA3)
  1. a. Research methodology of disease surveillance
  2. b. Children
  3. c. Adults
  4. d. Epidemiological terms
  5. e. Interpretation of the data

Textbook reading—Introduction nutrition and health surveillance, terms (eg, prevalence, incidence) including the National Health and Nutrition Examination Survey and the Behavioral Risk Factor Surveillance System.

Interactive database: [www.cdc.gov/brfss/](http://www.cdc.gov/brfss/)

Scientific publications from this database:

[apps.nccd.cdc.gov/BRFSSBib/SearchV.asp?type=0&Search=obesity&btnSearch=Search](https://apps.nccd.cdc.gov/BRFSSBib/SearchV.asp?type=0&Search=obesity&btnSearch=Search)

Interactive database: [www.cdc.gov/pednss/](http://www.cdc.gov/pednss/)

Publications: [www.cdc.gov/pednss/publications/index.htm](http://www.cdc.gov/pednss/publications/index.htm)

1. 2. International trends (CA4)
  1. a. Interactive database ([www.who.int/bmi/index.jsp](http://www.who.int/bmi/index.jsp))

b. Each student takes a country (or region of the US with high obesity rates) and reports on obesity trends and specifics about how the individual's/communities environment influences the risk of imbalanced energy consumption and expenditure.

Students will integrate topics covered with this country/region of the US in short in-class reports, discussions and portfolio entries throughout the class (indicated as CA4 integration).

1. 3. Obesity and health risks (CA3)
  1. a. Children – Case Study with a child with Type II Diabetes

Textbook reading—Introducing the topic of type II diabetes

Eriksson JG. Epidemiology, genes and the environment: lessons learned from the Helsinki Birth Cohort Study.

J Intern Med. 2007 May;261(5):418-25. Review.

McGillis Bindler RC. A cascade of events -- obesity, metabolic syndrome, and type 2 diabetes mellitus in youth.

Nurs Clin North Am. 2007 Mar;42(1):29-42, vi. Review.

Gluckman PD, Hanson MA. Developmental plasticity and human disease: research directions. *J Intern Med.* 2007 May;261(5):461-71. Review.

1. b. Adults — biological systems approach to chronic diseases associated with obesity

Groups of students will look at obesity related to the etiology of a chronic condition and the biological reason for obesity to be related to the chronic condition. Sample readings per groups of students include:

Wahba IM, Mak RH. Obesity and obesity-initiated metabolic syndrome: mechanistic links to chronic kidney disease. *Clin J Am Soc Nephrol.* 2007 May;2(3):550-62. Epub 2007 Mar 14. Review.

Poulain M, Doucet M, Major GC, Drapeau V, Series F, Boulet LP, Tremblay A, Maltais F. The effect of obesity on chronic respiratory diseases: pathophysiology and therapeutic strategies. *CMAJ.* 2006 Apr 25;174(9):1293-9. Review.

Curioni C, Andre C, Veras R. Weight reduction for primary prevention of stroke in adults with overweight or obesity. *Cochrane Database Syst Rev.* 2006 Oct 18;(4):CD006062. Review.

e. Personal reflection (CA4)

1. 1. Exploring implicit attitudes toward obesity (online [implicit.harvard.edu/implicit/demo/](http://implicit.harvard.edu/implicit/demo/))
2. 2. discussion and reflection on implicit attitudes and the exercise

f. Ethics—unresolved scientific and diversity issues (CA3 & 4)

1. As applied to recommendations for individual health and quality of life
2. As applied to public health goals and objectives

## II. Energy Balance Biological (CA3)

### a. Energy Intake 2 lectures, 2 sections

#### 1. definitions and measurement of calories

1. 3. food energy vs. metabolic energy
2. 4. introduction to metabolism of CHO, PRO, FAT (alcohol)
3. 5. food sources – macronutrient composition (CA 4 integration)

#### 5. Assessment of intake

1. a. methodologies and databases; unresolved scientific issues
2. b. individual assessment vs. national surveillance
3. c. self-assessment and analysis (CA4)

### Textbook introductory reading

### b. Energy Expenditure 2 lectures, 2 sections

#### 1. Basal Metabolic Rate

1. a. components
2. b. factors that elevate and lower
3. c. measurement
2. 2. Physical Activity
  1. a. Aerobic vs. anaerobic
  2. b. Measurement
3. 3. Diet Induced Thermogenesis

Booth FW, Lees SJ. Fundamental questions about genes, inactivity, and chronic diseases. *Physiol Genomics*. 2007 Jan 17;28(2):146-57. Epub 2006 Oct 10. Review.

### c. Weight loss and “fat burning” products 1 lecture, 2 sections

1. applying the scientific method to discern fact from fiction

## 2. examples in contemporary society; ethical issues

Starvation vs. Energy Imbalance (film: Keyes human starvation study)

1. Energy utilization vs. storage
2. Short, moderate, long-term (hormonal control, fuel utilization)
  1. 3. Refeeding and overcompensation
  2. 4. Hunger – biological/psychological
  3. 5. Comparisons with disordered eating

(CA 4 integration)

### III. Factors Influencing Energy Balance

- a. Genetic (CA3) 2 lectures, 2 sections
  1. 1. General introduction to genetic terms and gene expression

Textbook introductory reading

2. How genes could influence energy intake and expenditure – scientific studies as examples of genetic influences on:

1. a. food preferences and neuropeptide control of appetite/satiety
2. b. metabolism in response to energy substrates
3. c. energy expenditure during physical activity
4. d. overall energy storage and balance

3. Exploration of obesity syndromes ([obesitygene.pbrc.edu](http://obesitygene.pbrc.edu))

1. a. definitions
2. b. student exploration of database
3. c. CA 4 integration
4. 4. Genetic environmental interactions (CA 4 integration)
  1. a. Epigenetics – diet and physical activity influences
  2. b. unresolved issues
5. 5. Ethical Issues and unresolved scientific questions

1. a. Risk vs. benefits of genetic testing for risk of obesity and response to interventions
  2. b. Policy implications
6. High carbohydrate vs. high fat diet debate
1. c. Interface with genetics
  2. d. Unresolved scientific issue
- b. Psychosocial influences on energy intake and expenditure
1. Preference related to biological influences (CA3; 1 lecture, 1 section)
    1. a. food preferences and variation related to sensation, appetite and satiety
    2. b. neurobiology of physical activity
  2. Cognitive, behavioral, culture and diversity (CA4; CA 4 integration)
    1. a. cognitive restraint and influences on eating and physical activity
    2. b. beliefs, perceived value, self-efficacy
    3. c. cultural patterns for food value, intake patterns and physical activity
- c. Economic/educational/environmental 1 lecture, 1 section
1. Economic/educational groups at risk for obesity
  2. Economic effects on access to foods and physical activity
  3. Concept of socio-economic inequality and obesity
    1. 4. CA 4 integration
    2. 5. ethical issues and unresolved policy issues
- VI. Prevention efforts 1 lecture, 1 section
- a. Theories
1. biological
  2. economic
  3. behavioral
    1. 6. Multi-faceted (eg, Socio-Ecological Model of Change)
- b. Individual, community, national efforts



c. Ethical issues – does one size fit all?

VII. Team presentations and Synthesis 1 lecture, 2 sections

Synthesis Gen Ed Goals: The core course will meet all of the criteria outlined for the Science and Technology component of the Gen Ed curriculum (Group Three) and could address the Diversity and Multiculturalism (Group Four) as well.