

University of Oregon
Department of Biology

Course: Nutrition: Concepts & Controversies, BI 199, 03 Hr, CRN 11041, 16:00-18:50 M, 11 PAC, Fall 2014.

Website: <http://blogs.uoregon.edu/bi199/fall-2014/>

Instructor: V. Pat Lombardi

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Office Hours: T, 10:00-11:00 and by appointment.

Text + On-line Access: F.S. Sizer and E.N. Whitney (S&W). *Nutrition: Concepts and Controversies*, 13th ed. Belmont, CA: Wadsworth Cengage Learning, 2014, 2012. [ISBN: 9781285583587 listed in U of O Bookstore as *Nutrition w/Access* which includes text & *Diet Analysis Plus* (DA+) access code for on-line software. Text-only ISBN: 9781133603184 or 9781133609957; DA+ only access code ISBN: 9780538-495097.

Tentative Outline:

- Sep 29 (M) I. Introduction, information cards, required resources, course overview, expectations, grading. II. Nutrition research: accurate & reliable resources, peer-reviewed?, text vs. trade books, extensions .edu, .org, .gov vs. .com. **Within the next 24 hr, please explore the Science Library beneath Onyx Bridge (ONY) and begin topic search of your choice.** III. Why care about nutrition? How does nutrition affect diseases? IV. Genes, nutrients, bioactive food components (co-nutrients) & the nature of food. V. *Nutrition Controversy in the News*. VI. *Healthy People* goals for the US. VII. Science of nutrition vs. nutrition quackery (Class). **Readings**: (S&W) Inside front & back cover, charts A, B, C, Y & Z; Preface, xv-xix; ch 1 pp 1-23; *Controversy 1: Sorting the imposters from the real nutrition experts*, pp 24-30; Kleiner & Monaco nutrition quackery table (course outline).
- Oct 6 (M) I. Details about papers & presentations. II. Group activity: Tables A & B mystery search. III. Dietary Reference Intakes (DRI): Recommended Dietary Allowances (RDA) vs. Adequate Intakes (AI); Tolerable Upper Intake Levels (UL). IV. Dietary Guidelines for Americans; USDA (US Department of Agriculture) Guidelines *ChooseMyPlate* <http://www.choosemyplate.gov/food-groups/> vs. *MyPyramid* Food Guide. V. Think fitness! American College of Sports Medicine, American Heart Association, Centers for Disease Control, American Institute for Cancer Research, USDA/Department of Health & Human Services (HHS) Guidelines (Class). **Readings**: (S&W) Inside front cover, charts A & B (re-review); ch 2 pp 31-51.
- Oct 13 (M) **Paper topic due.** Submit by e-mail to lombardi@uoregon.edu prior to class. I. *Nutrition in the News*. II. Analyzing food labels + group activity. III. Are some foods "superfoods"? IV. Introduction to the remarkable body. Structure-function systems' overview: cardiovascular, nervous, endocrine & immune systems. V. Directions for personal food shopping spree data analyses due next week: cart content, cost & nutrient density: organic vs. conventional, vegetable vs. animal, supplements vs. whole foods. VI. Examining food labels: Group shopping activity @ Market of Choice. (Class, then Market of Choice, 1960 Franklin Blvd). **Readings**: (S&W) ch 2 pp 51-62; *Controversy 2: Are some foods "superfoods" for health?* ch 2 pp 63-9; ch 3 pp 70-81.

- Oct 20 (M) **Shopping spree data analyses due.** I. *Nutrition in the News*. II. The remarkable body. Structure-function of the digestive system. III. Is alcohol risky or beneficial? IV. Individual, then group feedback on shopping spree, cart analysis; cost & nutrient density (Class). **Readings:** (S&W) ch 3 pp 81-99. *Controversy 3: Alcohol & nutrition: Do the benefits outweigh the risks?* ch 3 pp 100-10.
- Oct 27 (M) **Outline of paper due.** Submit by e-mail to lombardi@uoregon.edu prior to class. I. Carbohydrates: Sugar, starch, glycogen & fiber. II. *Activity: Analyze your food intake.* Diet Analysis+ System & USDA SuperTracker computer nutritional analyses <http://www.choosemyplate.gov/supertracker-tools/supertracker.html> (Class, then Science Library, ONY B90 CD). **Please bring your Diet Analysis + Printed Access Card.** **Readings:** (S&W) ch 4 pp 111-29.
- Nov 3 (M) I. *Nutrition in the News*. II. Glucose & diabetes mellitus. III. Good vs. bad carbohydrates? IV. Lipids/lipoids: Fats, oils, phospholipids & sterols. **Readings:** (S&W) ch 4 pp 129-50; *Controversy 4: Are added sugars "bad" for you?* ch 4 pp 151-5; ch 5 pp 156-64.
- Nov 10 (M) I. Digestion & absorption of fats. II. Dietary fat, cholesterol & health. III. Food feature: Defensive dining. IV. HAPOC oils. Good vs. bad fats? **Readings:** (S&W) ch 5 pp 164-90. *Controversy 5: Good fats & bad fats – US guidelines & the Mediterranean diet?* ch 5 pp 191-6.
- Nov 17 (M) **Draft of paper due.** I. Amino acids & proteins. II. Amino acid & protein supplements. III. Protein-energy malnutrition (PEM). IV. *Activity: Analysis of high- & low-protein, high- & low-fat, & high- & low-carbohydrate diets.* Diet Analysis+ System, ESHA Research: Computer nutritional analyses (Class, then Science Library ONY B90 CD). **Please bring your Diet Analysis + Printed Access Card.** **Readings:** (S&W) ch 6 pp 197-225.
- Nov 24 (M) I. **Class Presentations I:** Nutrition Controversies Analyses. II. Vegetarian & meat-containing diets. What are the benefits & pitfalls? **Readings:** (S&W) ch 6 pp 226-32.
- Dec 1 (M) I. **Class Presentations II:** Nutrition Controversies Analyses. II. Vitamins, minerals & water. **Readings:** (S&W) ch 7 pp 233-78, ch 8 pp 286-327.
- Dec 3 (W) I. **Class Presentations III** (if needed, based on enrollment): Nutrition Controversies Analyses. [**NB:** We may have an alternative site for presentations on this day.]

Grading: Your final grade will be based on the following:

Attendance & Participation	25%
Quizzes + Other Activities	25%
Paper	25%
Presentation	25%

- 1. Course description.** Nutrition: Concepts & Controversies. Is there an easy way to separate nutrition fact from fiction? Are the 2011 USDA Food Guidelines biased? What are American Heart Association, American Institute for Cancer Research, and American College of Sports Medicine guidelines? Who should take supplements? What does recent research say about the best nutritional approach for improving the quality and quantity of life? This course will examine nutrition concepts, controversies, and research. We'll focus on debunking nutrition quackery and empowering ourselves with knowledge to expose outlandish claims. In order to evaluate claims and controversies, we'll rely upon the scientific method, peer-reviewed research and newsletters, and guidelines prepared by nationally-accredited health care and research organizations. The text for the course is Frances Sizer's and Eleanor Whitney's *Nutrition: Concepts & Controversies, 13th edition* (2014 updated, 2012). Students will read approximately 75-100 pages per week, complete group and individual mystery nutrition quizzes, engage in group and class discussions, conduct personal dietary analyses, tour local food stores, investigate nutrition claims, make a formal class presentation, and prepare a written research paper on a controversy of their choice. [See tentative outline.]
- 2. Course structure.** Includes electronic media presentations, controversy group discussions and group and individual activities (label analyses, shopping sprees, mystery group quiz competitions, calculations using personal preferences and dietary data), and computer nutritional analyses (Diet Analysis+ software with PIN internet access included with the textbook and USDA websites <http://www.choosemyplate.gov/>, <http://www.choosemyplate.gov/supertracker-tools/supertracker.html>). Open participation is encouraged to promote questions and discussion and to support and engage the entire class.
- 3. Tentative course outline by week.** Please see tentative outline for proposed schedule of topics. Topics may be modified based on student presentation choices.
- 4. Course requirements.** Attendance and participation in all lecture-discussions and activities; attendance and peer-review for class presentations; completion of term research paper, and end-of-term presentation.
- 5. Grading structure.** Attendance and participation in lecture-discussions 25% of grade (graded strictly according to percentage, e.g., 20/20 = 100%, 19/20 = 95%), dietary analyses, group and individual quizzes and other activities 25% of grade (graded, 25 points), term paper 25% of grade (100 point scale divided into introduction, content review, continuity, summary & conclusions, quality of references), and 25% end-of-term presentation (50% instructor + 50% peer-review evaluation based on: focus of introduction, nutrition controversy content, presentation media selection/effectiveness, question & answer responsiveness, and overall participation in the project).

Table. Top 10 Quackery Criteria--Indications of Nutrition Fraud

1. Treatment based on an unproven theory that usually calls for painless, nontoxic therapy.
2. Credentials of author/purveyor aren't recognized in the scientific community.
3. No reports published in scientific, peer-reviewed journals, but mass media is used for marketing.
4. Purveyors claim the medical establishment is against them; they play on the public's paranoia about the phantom greed of the medical establishment.
5. Treatment known only to author/purveyor; drugs and preparations manufactured according to a secret formula.
6. Excessive claims that promise a dramatic, miraculous cure, including prolonging life or preventing disease.
7. Emotional images rather than facts are used to support claims.
8. Treatment that calls for special nutritional support such as vitamins, minerals, or health food products.
9. Purveyors caution clients or readers against discussing the program so that they don't get discouraged by those who are negative.
10. Programs based on drugs, treatments, or tests that have not been labeled for such uses.

SOURCES: Based on Kleiner, SM. Beware of nutrition quackery. *The Physician and Sportsmedicine*, 1990, 18(6), June, 46, 49, 50. Monaco, GP. The primary care physician: the first line of defense in the battle against health fraud. *Medical Times*, 1986, 114(5), 43-48.

BI 199 Nutrition: Concepts & Controversies, Sample Presentation Schedule from Fall 2013

Monday, November 18, 2013

Foods & Health

Chloe Aiu, *GMO foods*

Kari Van Mols, *Soy controversies*

Reanna Clemenson, *Healthy oils*

Christina Peil, *Juicing: benefits & risks*

Gavin Leach, *Blueberries & brain health*

Vitaut Slabin, *Skin: good food — bad food connections?*

Monday, November 25, 2013

Nutrition & Sports Physiology

Hannah Vernetti, *Pre-game nutrition for women's soccer*

Therese Wichmann, *Nutrition after high-intensity exercise*

Stephen Hasegawa, *Cutting body fat for competition*

Supplements

Bridget Beckett, *Calcium supplements vs. dairy?*

Jack Peirson, *Whey vs. casein protein for muscle hypertrophy*

Brent Layton, *Protein supplements: fillers & additives*

Anthony Mendez, *Creatine monohydrate*

Monday, December 2, 2013

Diets & Special Populations

Mary Beth Carroll, *Maternal-fetal nutrition during pregnancy*

Lionel Segura, *Breast milk vs. formula*

Elizabeth Hawkins, *Why gluten-free?*

Elizabeth Mannering, *The Atkins diet*

Tori Ganahl, *Herbalife nutrition program*

Riley Sanchez, *The 7-day diet*