Course Instructor: Douglas L. Taren, PhD

Location: Drachman Hall A118

Course Time: Tuesday
1:00pm – 3:50pm

Office Hours: By appointment
Drachman Hall A317H
taren@email.arizona.edu
Phone: 626-8375

Course Description

This course will focus on current nutrition knowledge affecting health in underserved populations and in low-income countries. The impact of various nutrient inadequacies at different stages of the life cycle and their functional outcomes in terms of morbidity, psychological well-being, reproduction and growth will be highlighted. Students will become acquainted with the epidemiology of nutritional disease in developed and low-income countries. Programs and resources available to combat malnutrition will be evaluated. The role of world food production, food availability and supply in relation to nutrition and health will be discussed in the context of socioeconomic development and current political/economic policies and realities.

Course Prerequisites

Graduate student in a health related field including biological or social sciences.

Objectives of the Course

At the end of the course students will be able to:

1. Analyze the causes and effects of the major nutritional deficiencies that are present in the world.

2. Analyze the impact biological and sociological factors that modify nutrition - infection interactions.

3. Describe the nutrition transition and factors affecting it.

4. The role of women in nutrition and how nutrition affects women

5. Determine the effect of governmental policies on nutritional status in low-income countries.

6. Prioritize factors that need to be considered when developing public health programs to combat malnutrition in low-income countries.
Public Health Competencies Addressed by This Course
B. 1. Communicates effectively both in writing and orally (unless a handicap precludes one of those forms of communication)
C. 1. Assess and interpret information to develop relevant policy options
C. 7. Developing mechanisms to monitor and evaluate programs for their effectiveness and quality
D. 3. Identifying and examining the role of cultural, social, ethnic, religious, spiritual, and behavioral factors in determining disease prevention health promoting behavior, and health service organizational and delivery
E. 3. Applying the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries

How to Succeed in this Class

1. Read the assignments.
2. Class participation is essential. Be prepared for class discussions. You will need to support your opinions, programs, and statements with facts from the readings and lectures.
3. Turn your cell phones to vibrate, silent or off during class. Students who have cell phones going off during class and students talking on cell phones in class will be asked to leave. If you are a physician or have another occupation that requires you to be on call, please speak to me so I know that you may have to be interrupted during class, and sit in the back of the class.
4. Do not have your laptop computers on during class unless it is part of a course activity.
5. You are welcome to email the instructor regarding class issues. Place “Student in CPH 560” in the subject line of your email. This will ensure that I read your email in a timely fashion.
6. Do not leave class early and attend every class.

Course Requirements and Evaluations

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<tr>
<td>Chapter Paper</td>
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<td>Class Project</td>
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<td>Mid Term</td>
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Graduate Students

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You will be required to write what is equivalent to a book chapter on a strategy for improving the nutritional status of a population within low and middle-income countries. Each chapter will be 15-20 double spaced pages with a 12pt Arial font without references, tables or charts. You should plan to have 20 to 50 references for the chapters and 3-7 graphics. You can work alone or in groups of two. This chapter will be the foundation for your class project.

The chapter needs to demonstrate how a nutrition strategy can change the nutritional status of a community, nation, region or world. It needs to use empirical data to support what has worked and what has not worked. You chapter should include a variety of data to develop final process and outcome statements along with recommendations regarding the strategy. The data may come from experimental studies, demographic data, ethnographic studies, epidemiological studies and program evaluations. You will need to provide specific examples across the various nutrition topics that are part of this course. Your outcomes for determining success need to be nutritional outcomes (anthropometry and indicators of nutritional status). You need to conclude with making statements based on the evidence regarding what works and what does not work.

You are expected to meet with the Professor throughout the semester. The minimum should be at least once for 30 minutes to go over the chapter.

The topics for the chapters will be on the following strategies and how they are used to improve nutritional status of a community, nation or region:

Delivering Nutritional Programs in Low and Middle Income Countries

1. Nutrient Supplementation Programs
2. Fortification Programs
3. Food Based Interventions
4. Primary Care Programs
5. Nutrition Education Programs
6. Microfinance Programs
7. Community Development Programs
8. Economic Restructure
9. Agricultural Policies
10. Water Programs
11. Sanitation Programs
12. Local Food Production
13. Humanitarian Assistance in Crises Situations
14. Plant Production
15. Medical Interventions
16. School Based Programs
You must include the following sections in your chapters using the headings that are provided:

- Introduction
- Intervention Strategies
- Community Programs
- Nutritional Outcomes
- Sustainability
- Conclusions
- Recommendations
- References

Your reference format must be in the format for the journal *Public Health Nutrition*. You can get the complete information on this format at the following site: [http://assets.cambridge.org/PHN/PHN_ifc.pdf](http://assets.cambridge.org/PHN/PHN_ifc.pdf). Place your graphs and tables after your references on separate pages. Number the pages and lines for each page. Place in the header, the last names of the authors and the title for the chapter as printed above. Your own title can be longer and more catchy.

You will sign up for the topics or a different topic with approval of the professor. There will only be one chapter per topic. There are several deadlines to meet this assignment and feedback will be provided after each deadline. The deadlines are the following:

- Jan 31: Submit proposed topic and authors
- Feb 14: Provide list of potential references (25-50 references)
- Feb 21: Provide initial outline and overall purpose of the paper.
- Mar 20: Submit more detailed outline with some text and context to paper
- Apr 03: Submit more detailed draft of paper
- Apr 17: Chapter Due

Once all the chapters are written, you will be asked to sign a release to be an author for a group publication. You will then remain in contact with the professor on the outcome of the publication.

**Class Project Guidelines**

You are to create an online presentation from the chapter that you wrote and demonstrate this presentation to the class. The online module will include a PowerPoint presentation and a videotaped lecture that will be incorporated into an online course that you will complete prior to your class presentation. You will need to provide at least 5 learning objectives for the presentation using higher levels of learning from Bloom’s Taxonomy of Learning Objectives. You also will need to include at least 10 multiple choice questions.

The length of your in class presentation will be determined by the total number of chapters that are written.

**Final Exam**

You will have one comprehensive take home assignment that will be due
Schedule of Class Topics

Jan 17: Introduction, Issues Associated with Nutrition in Low-income countries

Jan 24: Food Security: Measurements and Implications for Policy Development

Jan 31: Anthropometry: Assessment, Epidemiology, Pathology, Treatment, Prevention

Paper Topic Due

Feb 07: No Class (Work on Papers)

Feb 14: Vitamin A Deficiency: Assessment, Epidemiology, Pathology, Treatment, Prevention

Provide Preliminary List of References for Paper

Feb 21: Iron Deficiency: Assessment, Epidemiology, Pathology, Treatment, Prevention

Provide Initial Paper Outline

Feb 28: Other Micronutrient Deficiencies: Assessment, Epidemiology, Pathology, Treatment, Prevention

Mar 06: Mid Term Exam; Water, Sanitation, Infection and Nutritional Status

Mar 13: SPRING BREAK

Mar 20: Breastfeeding and Infant Feeding

Provide Second Draft of Paper Outline

Mar 27: Nutritional Issues Affecting Women and Pregnancy Outcomes

Apr 03: Nutrition and HIV/AIDS

Provide Draft Paper

Apr 10: Adult Nutrition and Nutrition Transition

Apr 17: Refugees, Displaced Populations and Emergency Situations

Term Paper Due

Apr 24: Measuring Impact and International Aid

May 01: Class Projects

May 08: Final Take Home Assignment Due by 5pm.
ACADEMIC POLICIES:

Communications: You are responsible for reading emails sent to your UA account from your professor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: http://www.registrar.arizona.edu/emailpolicy.htm

Disability Accommodation: If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. The official policy can be found at: http://catalog.arizona.edu/2008%2D09/policies/disability.htm

Academic Integrity: All UA students are responsible for upholding the University of Arizona Code of Academic Integrity, available through the office of the Dean of Students and online: The official policy found at: http://dos.web.arizona.edu/uapolicies/scc5308abcd.html and http://dos.web.arizona.edu/uapolicies/cai1.html.

Classroom Behavior: All students are expected to behave respectfully during class. If you arrive late or must leave early, please take a seat near the door to minimize disruption. Please turn off cell phones and pagers unless there is great need (e.g., if you are a practicing physician on call or a family crisis is unfolding). If you must allow for such contact, set cell phones and pagers to vibrate if at all possible, and sit near an exit. Students are expected to be familiar with the UA Policy on Disruptive Behavior in an Instructional Setting found at http://web.arizona.edu/~policy/disruptive.pdf and the Policy on Threatening Behavior by Students found at http://web.arizona.edu/~policy/threatening.pdf

Grievance Policy: Should a student feel he or she has been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, the department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance using the Graduate College Grievance Policy found at: http://grad.arizona.edu/academics/policies/academic-policies/grievance-policy

Grade Appeal Policy: http://catalog.arizona.edu/2009-10/policies/gradappeal.htm

Syllabus Changes: Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate.

Please Note: URLs change frequently. You will need to test the URLs in the syllabus you produce each semester, to ensure the links are correct.

Telephone and Computer Use: You are not allowed to have your computer on during class unless it is for a course activity. Turn your cell phones to silent or vibrate in order to not disrupt the class and disturb your fellow students and professor.
Plagiarism: What counts as plagiarism?

- Copying and pasting information from a web site or another source, and then revising it so that it sounds like your original idea.
- Doing an assignment/essay/take home test with a friend and then handing in separate assignments that contain the same ideas, language, phrases, etc.
- Quoting a passage without quotation marks or citations, so that it looks like your own.
- Paraphrasing a passage without citing it, so that it looks like your own.
- Hiring another person to do your work for you, or purchasing a paper through any of the on- or off-line sources.
Class Schedule and Reading Assignments

Required Readings are from the literature. These are available on the D2L site for this course. Required Readings may also change as more current information becomes available during the semester. The textbooks chapters are to provide you additional reference information.

Suggested Textbooks


**Jan 17: Introduction, Issues Associated with Nutrition in Low-income countries**

Learning Objectives:

1. Understand the perspective that will be presented in this class regarding international nutrition is a combination of biological and social sciences.

2. Be able to identify the primary differences for the nutritional problems that exist between developed and low-income countries.

3. Know the assignments that will be given during the semester.

4. Know the grading system that will be used for this class.

5. Identify the major nutritional issues that are currently present in the world.

**Textbook Chapters**
Semba & Bloem: Chapter 1
Latham: Chapters 1, 4, 5

**Required Reading**


Additional References


FAO. World Declaration of Nutrition. [http://www.fao.org/docrep/u9920t/u9920t0a.htm](http://www.fao.org/docrep/u9920t/u9920t0a.htm)


UN Standing Committee on Nutrition: [http://www.unscn.org](http://www.unscn.org)

**Jan 24: Food Security: Measurements and Implications for Policy Development**

Food Security Learning Objectives:

1. Explain the difference between issues of food security and nutrition surveillance activities.

2. Compare how various intrahousehold factors affect food security.

3. Critic cultural and economic strategies for developing programs to decrease food insecurity within poor households.

**Textbook Chapters**

Semba & Bloem: Chapters 19  
Latham: Chapters 2, 24, 33, 34, 35, 40

**Required Readings**

Read all the FAQs and Definitions.


**Additional References**


**Jan 31: Anthropometry: Assessment, Epidemiology, Pathology, Treatment, Prevention**

Child Growth and Malnutrition Learning Objectives:

1. Describe the epidemiology of childhood malnutrition.
2. Explain the uses and limitations of growth charts.
3. Discriminate between the social and biological effects of malnutrition on child development.
4. Describe appropriate prevention, and treatment programs for malnourished children under various social and economic situations.

Textbook Chapters

Semba & Bloem: Chapter 4, 16
Latham: Chapters 6, 8, 9, 12
Required Readings

WHO. "A growth curve for the 21st century"
http://terrance.who.int/mediacentre/videos/who11621.wmv

Download Software and use it.

http://www.who.int/nutrition/publications/severemalnutrition/9789241598163_eng.pdf


Additional References


http://www.who.int/nut/documents/manage_severeMalnutrition_eng.pdf


**Feb 07:** No Class

**Feb 14:** Vitamin A Deficiency: Assessment, Epidemiology, Pathology, Treatment, Prevention

**Vitamin A Learning Objectives:**

1. Describe the epidemiology of vitamin A deficiency on a world wide and local level.

2. Understand the methods that can be used to determine the prevalence of vitamin A deficiency in a low-income country.

3. Explain the role that vitamin A deficiency has on childhood morbidity and mortality in low-income countries.

4. Justify several strategies that can be used to prevent and treat vitamin A deficiency.
Textbook Chapters

Semba & Bloem: Chapter 11
Latham: Chapters 11, 15

Required Reading


Gogia S. Sachdev HS. Vitamin A supplementation for the prevention of morbidity and mortality in infants six months of age or less. *Cochrane Database of Systematic Reviews*, 2011.

Additional References


IVACG Statements:
Policy Statement on Vitamin A, Diarrhea and Measles.
Maternal Night Blindness: A new indicator of vitamin A deficiency
Safe Doses of vitamin A during pregnancy and lactation.
The Annecy Accords to assess and control vitamin A deficiency.

IVACG. The bioavailability of dietary carotenoids: Current Concepts.


Feb 21: Iron Deficiency: Assessment, Epidemiology, Pathology, Treatment, Prevention

Iron Learning Objectives:

1. Understand the methods that can be used to determine the prevalence of iron deficiency and anemia in a low-income country.

2. Justify a strategy that can be used to prevent and treat iron deficiency during pregnancy in low-income countries.

3. Compare strategies that can be used to prevent and treat iron deficiency in childhood and during pregnancy
Textbook Chapters

Semba & Bloem: Chapter 13
Latham: Textbook: Chapters 10, 13, 20

Required Reading


Additional References


Feb 28: Other Micronutrient Deficiencies: Assessment, Epidemiology, Pathology, Treatment, Prevention

Iodine and other Micronutrient Learning Objectives:

1. Describe the epidemiology of Iodine and other micronutrient deficiencies on a world wide and local level.

2. Understand the methods that can be used to determine the prevalence of iodine and other micronutrient deficiencies in a low-income country.

3. Justify a strategy that can be used to prevent and treat childhood iodine deficiency in low-income countries.

4. Justify a strategy that can be used to prevent and treat iodine deficiency during pregnancy in low-income countries.

Textbook Chapters

Semba & Bloem: Chapter 12, 14, 15
Latham: Chapters 14, 16, 32

Required Reading


Habicht J-P and Pelto GH. Multiple micronutrient interventions are efficacious, but research on adequacy, plausibility, and implementation needs attention. The Journal of Nutrition. 142: 205s-209s, 2012.


Additional References

http://indorgs.virginia.edu/iccidd/idddocs/thyroid_vol_ref.htm


**Mar 06: Water, Sanitation, Infections, and Nutritional Status**

**Water and Sanitation Learning Objectives:**

1. Analyze how water and sanitation projects can improve the nutritional status of children.

2. Analyze why water and sanitation projects have not improved the nutritional status of children.
3. Compare several important modifying factors that promote and impede the success of water and sanitation projects and why.

4. Compare the importance of water quality and water quantity on nutritional status.

5. Interpret the paradigm regarding the two-way interaction that exists between malnutrition and infections.

6. Explain the role of various socioeconomic and cultural factors that affect the prevention and treatment of diarrheal infections.

7. Describe and critic the advances that have been made with the treatment of diarrheal infections within resource deprived environments.


9. Analyze factors that affect the Impact that Nutrition Interventions Have on Infectious Diseases.

10. Provide strategies that can be used to break the nutrition-infection interactions that exists for various diseases

Textbook Chapters

Semba: Chapter 5
Latham: Chapter 3

Required Reading

WHO and UNICEF. Progress on Sanitation and Drinking Water: 2010 Update.


Additional References


Breastfeeding Learning Objectives:

1. Compare the advantages and disadvantages of extended breastfeeding.
2. Describe factors affecting, and related to exclusive breastfeeding and the start of the weaning period.
3. Compare the advantages and disadvantages of breastfeeding when a mother is infected with HIV.

Textbook Chapters

Latham: Chapter 7

Required Reading


UNICEF. Infant and Young Child Feeding. [http://www.unicef.org/nutrition/index_breastfeeding.html](http://www.unicef.org/nutrition/index_breastfeeding.html)

Including the following sections:

- Breastfeeding
- Complementary feeding
- Baby Friendly Hospital Initiative
- International Code of Marketing of Breast Milk Substitutes & other legislative issues
- HIV and infant feeding
- Infant feeding in emergencies

Additional References


WHO. *Guiding Principles For Complementary Feeding For The Breastfed Child.*


Mar 27: Nutritional Issues Affecting Women and Pregnancy Outcomes

Women and Pregnancy Outcomes Learning Objectives:

1. Name and analyze the importance of four roles that woman have in the providing food to their families in low-income countries.

2. Analyze the risk of vertical transmission of HIV by breastfeeding.

3. Describe the impact that maternal nutrition has on the health of women and their infants.

4. Analyze the benefits of extended breastfeeding.

Textbook Chapters

Semba and Bloem: Chapters 2, 3
Latham: Chapter 6

Required Reading


Additional References


Apr 03: Nutrition and HIV

Learning Objectives:

1. Describe the salient issues with Nutrition and the HIV management.

2. Analyze the Infant Feeding issues associated with the HIV epidemic in Africa.

3. Critic nutrition intervention studies that have targeted people with HIV/AIDS.

4. Appropriately debate the role that women have on the nutrition status of people with HIV and those at risk for HIV.
Textbook Chapters:
Semba: Chapter 10

Required Reading

UNAIDS.  Policy Brief, HIV, food security and nutrition, 2012.


FAO.  Pocketbook on integrating HIV/AIDS considerations into food security and livelihoods projects.


McIntyre J. Use of antiretrovirals during pregnancy and breastfeeding in low-income and middle-income countries.  Current Opinion in HIV & AIDS. January 2010 - Volume 5 - Issue 1 - p 48–53


Additional References

Jackson DJ, Goga AE, Doherty T, Chopra M.  An Update on HIV and Infant Feeding Issues in Developed and Developing Countries OGN, 38, 219-229; 2009.


Coutsoudis A.  Infant Feeding Dilemmas Created by HIV: South African Experiences  


**Apr 10:** Adult Nutrition and the Nutrition Transition

*Textbook Chapters*

Semba: Chapters 17, 18

*Required Reading*


*Additional Reading*

Popkin BM. Contemporary nutritional transition: determinants of diet and its impact on body composition. *Proceedings of the Nutrition Society*, Page 1 of 10. doi:10.1017/S0029665110003903 g . The Summer Meeting of the Nutrition Society hosted by the Scottish Section was held at Heriot-Watt University, Edinburgh on 28 June–1 July 2010.


Charlton KE, Rose D. Nutrition among Older Adults in Africa; The Situation at the beginning of hte Millennium. *Journal of Nutrition.* 2001;131(9):2424S-2428S.


**Apr 17: Refugees, Displaced Populations and Emergency Situations**

**Learning Objectives:**

1. Analyze the worldwide refugee situation and risk factors that affect the nutritional status of this special population.

2. Compare the influences of the multiple dynamic forces that change the nutritional status of refugees and displaced people.

3. Develop a framework to assess the nutritional situation of refugees and displaced people.

4. Develop a framework to design, implement, monitor and evaluate nutrition programs for refugees and displaced people.
Required Reading


Additional Reading


Learning Objectives:

1. Analyze factors that affect the impact of nutrition interventions.
2. Analyze the role that international agencies have on the nutritional status of the world.
3. Identify and describe the role that NGOs have on world nutrition.

Textbook Chapters:

Semba: Chapters 20, 21, 22

Required Reading


Sridhar D. Improving aid for maternal, newborn and child health.

Cleland J. The benefits of educating women.


Morris SS, Cogill B, Uauy R. Effective international action against undernutrition: why has it proven so difficult and what can be done to accelerate progress?

Heikens GT, Amadi BC, Manary M, Rollins N, Tomkins A. Nutrition interventions need improved operational capacity.

Additional References


