Instructors

Amanda Holliday, M.S., R.D, LDN
2211 McGavran-Greenberg Hall, School of Public Health, Dept. of Nutrition
Phone: (919-966-7214)
Email: amanda_holliday@unc.edu
Twitter: @amandasholliday
Blog: www.tiny.cc/3squares
Office hours by appointment

Heather M. Wasser, PhD, MPH, RD, IBCLC
2200 McGavran-Greenberg Hall
School of Public Health, Dept. of Nutrition
Phone: (919-843-4788)
Email: wasser@email.unc.edu
Office hours by appointment

Carmen Samuel-Hodge, PhD, MS, RD, LDN
1700 MLK Jr. Blvd. Room 250
Phone: (919-966-0360)
Email: carmen_samuel@unc.edu
Office hours by appointment

Teaching Assistant

Kathryn Bernstein, MPH/RD Student
Email: kathryn.bernstein@unc.edu

Course Description

This course is concerned with nutrition during major phases of the life cycle. It will include units on (1) women’s health during the preconception period, pregnancy, and lactation, as well as infant nutrition, (2) childhood and adolescence, (3) adulthood, and (4) older adults (65+).

Class sessions are meant to be engaging and include lectures, class debates, discussion questions, and presentations by students.

Course Objectives

The student will:

1. Understand the biological basis of energy and nutrient requirements during pregnancy and lactation, infancy, childhood, adolescence, and the older adults (65+).
2. Understand the consequences of energy and nutrient inadequacies and excesses, and identify major public health problems related to each phase of the life cycle.
3. Be able to identify socioeconomic, cultural and environmental barriers to meeting nutrient needs, and be aware of and value these critical determinants of health in informing the development of nutrition programs and policies targeted to different phases of the life cycle.
4. Analyze and evaluate scientific evidence related to nutritional needs, requirements and health issues of women of reproductive age, infants, children, adolescents, adults, and older adults.
5. Integrate information from a variety of sources to develop a comprehensive understanding of nutrition as it relates to the different phases of the life cycle.
Student Learning Outcomes covered in this course:

KRD 5.2 The physical and biological science foundation of the dietetics profession must be evident in the curriculum. Course content may include organic chemistry, biochemistry, physiology, genetics, microbiology, pharmacology, statistics, nutrition metabolism and nutrition across the lifecycle.

Readings

Class readings will be from review articles, original research articles, government reports and chapters in textbooks. All of the readings except those from the Brown textbook will be available on Sakai. Class podcasts, videos and interactive content links will also be posted on Sakai and on the course syllabus.

Required Textbook

This book is available at the campus bookstore and on reserve at the HSL. You can purchase the ebook or rent the text for a reduced price at <http://www.cengagebrain.com/shop/search/9781133600497> or on Amazon.

Course Requirements and Grades

Final grades will be based upon the completion of the following assignments and exams:

<table>
<thead>
<tr>
<th>Task</th>
<th>Value</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Studies (4 Total - 1 per Life Stage)</td>
<td>800</td>
<td>See Table Below or Syllabus</td>
</tr>
<tr>
<td>Lifecycle Project Reflection</td>
<td>100</td>
<td>December 6th, 2016 (or Before)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
<td>Saturday., December 10th, 2016 at Noon</td>
</tr>
<tr>
<td>Total</td>
<td>1100</td>
<td></td>
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Letter grades are assigned according to the following scale:
H (1100-1034); P (1033-769); L (768-715); F (<715)
A (1100-1033); A- (1032-990); B+ (989-957); B (956-913); B- (912-881); C+ (880-848); C (847-804); C- (803-772); D+ (771-739) D (738-695); D- (694-651); F (<651)

Note: Students who have a documented disability from the UNC Office of Accessibility will be provided alternative testing arrangements. Late projects and papers will not be accepted. Students are required to take final examinations as scheduled. The only exceptions are for illness as documented by being on infirmary list at Campus Health Services or for other medically-documented or family or personal emergency situations. A student must meet with an academic dean to request permission for an examination excuse and documentation will be required.

Honor System

As part of the UNC Honor Code, Carolina students pledge to maintain ideals of academic honesty, personal integrity, and responsible citizenship. These ideals are embodied in the Honor Code set forth in the Instrument, with the support of students, faculty, and staff. When a student applies to Carolina, he undertakes a commitment to the principles embodied in the Honor Code. The University endeavors to instill in each student a love of learning, a commitment to fair and honorable conduct, and respect for the safety and welfare of others. It also strives to protect the community from those who, for whatever reason, do not embody these values in their conduct, and to protect the integrity of the University and its property for the benefit of all.

Online Course Evaluation
UNC uses an online evaluation system to assess the quality of instruction and learning of the courses offered. During the last few weeks of the course, an e-mail will notify you that the system is open with a link to access the form. This evaluation system is anonymous. The instructors will only see the aggregate data with any comments at the end of the course after grades are turned in. It is your responsibility as a student to complete the evaluations. You will be sent multiple e-mails until it is completed.

Laptop Policy

We are pleased to have students take notes via laptops. However, we expect that students who bring their laptops to class will use them for academic purposes and not for surfing the internet or other extracurricular activities not related to the class discussion. Please remember that engaging in such activities during class time is disruptive to fellow students who can see your screen. It is also unacceptable for any of our esteemed visiting guest lecturers to see such non-academic activities during class time.

Course Components

1. Case Studies

Case Studies will be assigned approximately one week before the end of each section. Please take notes during lecture and ask questions to help you complete your case study. Case studies are mostly short answer and will assist you with applying the knowledge you've learned in class to a mock client's case.

Case Studies are due at 2:00pm. You must bring a printed copy to class AND place them electronically on the Sakai Assignment tab.

<table>
<thead>
<tr>
<th>Case</th>
<th>Release Date</th>
<th>Due Date</th>
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</thead>
<tbody>
<tr>
<td>Pregnancy, Lactation and Infancy</td>
<td>September 13</td>
<td>September 22</td>
</tr>
<tr>
<td>Childhood and Adolescence</td>
<td>October 18</td>
<td>October 27</td>
</tr>
<tr>
<td>Adulthood</td>
<td>November 1</td>
<td>November 8</td>
</tr>
<tr>
<td>Older Adult</td>
<td>November 29</td>
<td>December 8</td>
</tr>
</tbody>
</table>

2. Lifecycle Project

Please choose one life phase to complete a lifecycle project. Students may sign up for the life phase that interests them during the first day of class. The goal of this project is to provide students with an opportunity to interview someone in their interested life phase and write a 2-pager to outline what you learned in the interview and then reflect on how this was similar or different than what you learned or thought about this life phase. Please see Sakai for further instructions and the rubric.

3. Final Exam

The final exam will be a multiple-choice exam administered through Sakai. The exam will be timed and closed book. The intent of the exam is to be sure you have obtained knowledge throughout the course that is required for you to be successful in working with people across the life spectrum.
Schedule of Class Sessions

Aug 23

*Introduction (Holliday, Wasser and Samuel-Hodge)*

**Homework:**
- Complete required readings for Aug 25 class.
- Complete Chapter 4 review questions via Socrative and be prepared to discuss in class.

Aug 25

**UNIT 1 Pregnancy (Wasser)**

**Section 1: Physiology and Nutrient Needs During Pregnancy**

**Required Readings:**
- Brown Text: Ch 4: pp. 87-137

**Watch in Class: Khan Academy**

**Class Participation:**
- Review chapter questions for understanding.
- In pairs, students complete worksheets, “Difficulty Gaining Weight During Pregnancy” and “Nutritional Requirements During Pregnancy.”

**Homework:**
- Complete required readings for Aug 30 class.
- *Recommend working ahead on homework for Sep 1 class*

Aug 30

**Section 2: Counseling for a Healthy Pregnancy**

**Required Readings:**

**Class Participation:**
- In pairs, students conduct 24-hour recalls using Choose MyPlate SuperTracker: [https://www.choosemyplate.gov/tools-supertracker](https://www.choosemyplate.gov/tools-supertracker) and complete the questions via Socrative.

**Homework:**
- Complete required readings for Sep 1 class.
- Complete chapter 5 review questions via Socrative and be prepared to discuss in class.
- In pairs, prepare a brief presentation outlining your assigned condition and answers to your case study: "Preeclampsia" 5.1 (p.144), “Gestational diabetes” 5.2 (p.148), or “Twin pregnancy” 5.3 (p.156). Post your presentation to the Sakai site at least one hour before class and be prepared to present.
Sep 1

Section 3: Pregnancy Conditions and Interventions

Required Readings:
Brown Text: Ch 5: pp. 138-163

Class Participation:
- Review chapter questions for understanding.
- Students will be randomly selected to present their case study.

Homework:
- Complete required readings for Sep 6 class.
- Complete chapter 6 and 7 review questions via Socrative and be prepared to discuss in class.

Sep 6

UNIT 2 Lactation and Infancy (0 – 12 Months) (Wasser)

Section 1: Lactation Physiology and Breastfeeding Recommendations

Required readings:
- Brown Text: Ch 6: pp. 164-196 and Ch 7: pp. 197-225

Watch in Class: Khan Academy

Class Participation:
- Review chapter questions for understanding.
- In pairs, students complete worksheet, “The Nutrition of Colostrum and Human Milk.”

Homework:
- Complete required readings for Sep 8 class.
- Prepare a brief presentation describing your assigned setting: hospitals/birthing centers, WIC, workplace, child care, human milk banks, or media/marketing. Include: (1) the rationale for targeting this setting in breastfeeding promotion efforts, (2) an illustration of a recent policy or programmatic change to promote breastfeeding in this setting, and (3) useful resources/links. Be prepared to present in class.

Sep 8

Section 2: Protection, Promotion and Support for Breastfeeding

Required Readings:

Class Participation:
- Students will be randomly selected to present on their setting.
Homework:
- Complete the required reading for Sep 13 class.
- Complete *Formula Feeding* review questions via Socrative and be prepared to discuss in class.
- Complete the Centers for Disease Control and Prevention, Growth Chart Training: [http://www.cdc.gov/nccdphp/dnpao/growthcharts/who/index.htm](http://www.cdc.gov/nccdphp/dnpao/growthcharts/who/index.htm). Do not complete case studies. We will do these together in class.

**Sep 13**

**Section 3: Infant Formula and Growth Assessment**

*Pregnancy/Lactation and Infancy Case Study Released*

**Required Readings:**
- American Academy of Pediatrics, Pediatric Nutrition Handbook, Chp 3., *Formula Feeding of Term Infants*

**Watch in Class:**

**Class Participation:**
- Review chapter questions for understanding.
- In pairs, students will complete the CDC case examples for “Low Weight-for-Height,” “Inadequate Growth or Just Small,” “Excess Weight Gain,” “Transitioning from the WHO to CDC,” and “Early Lactation Difficulties.”

**Homework:**
- Complete required readings for Sep 15 class.
- Complete Chapter 8 review questions via Socrative and be prepared to discuss in class.
- Pretend that you are a new mother or father and want to find out how best to feed your infant after 6 months. Write down at least three questions that you might have about feeding your infant and find the best answers at that site. How does the information at the web site compare to information in the text? Be prepared to discuss in class.

**Sep 15**

**Section 4: Complementary Feeding**

**Required Readings:**
- Brown Text: Ch 8: pp. 226-251

**Class Participation:**
- Review chapter questions for understanding.
- Students will be randomly selected to discuss their findings on infant feeding advice for new parents.
Homework:
• Complete required readings for Sep 20 class.
• Complete Chapter 9 review questions via Socrative and be prepared to discuss in class.
• Complete case studies 9.1, “Premature birth in an at-risk family” (p.265) and 9.2, “Noah’s Cardiac and Genetic Condition” (p.268) and be prepared to discuss in class.

Sep 20
Section 5: Infant Nutrition – Conditions and Intervention

Required Readings:
• Brown Text: Ch 9: pp. 252-271

Class Participation:
• Review chapter questions for understanding.
• Students will be randomly selected to provide answers to the case studies.

Homework:
• Complete required readings for Sep 22 class.

Sep 22
Unit 3 Childhood Nutrition (Samuel-Hodge)

Section 1: Child Growth and Development
• Normal growth and development
• Energy and nutrient needs
• Screening tools used to assess growth in young children

Pregnancy/Lactation and Infancy Case Study Due

Required Readings:
• Brown Text: Ch 10: pp. 272-283

Additional Resources:
• http://www.cdc.gov/nccdphp/dnpao/growthcharts/resources/index.htm

Class Participation:
• Complete the activity posted on Sakai; be prepared to discuss in class.

Homework:
• Complete required readings for Sep 27 class.

Sep 27
Section 2: Psychosocial Factors in Child Feeding
• Development of feeding skills and feeding behaviors
• Factors that influence food choices
• Caregiver concerns
Required Readings:

Additional Resources:
- See Sakai

Homework:
- Complete required readings for Sep 29 class.

Sep 29  
Section 3: Dietary Pattern and Nutrient Needs
- Dietary and physical activity recommendations
- Common nutrition problems

Required Reading:
- Brown Text: Ch 10, pp 283-300 and Ch 12, pp 318-334

Homework:
- Complete required readings for Oct 4 class.

Oct 4  
Section 4: Public Food and Nutrition Programs for Children
- Early childcare and school-based programs
- Supplemental food programs
- Addressing child hunger and food insecurity

Required Readings:
- USDA Child Nutrition Programs  
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)  
- Hunger in America: 2015 United States Hunger and Poverty Facts  
  http://www.worldhunger.org/articles/Learn/us_hunger_facts.htm  
- Child Hunger Fact Sheets
https://www.nokidhungry.org/pdfs/Fact_Sheet-2016.pdf
• Food Research & Action Council (FRAC) – More than 1 in 7 Americans in Food Insecure Households in 2014
• FRAC Brief - Food Insecurity and Obesity: Understanding the Connections, 2011

Additional Resources:
• USDA
  o Household Food Security in US 2014, September 2015
  o Food Security In-Depth Interview Study - Summary, 2013
• FRAC - SNAP and Public Health, 2013
• Metallinos-Katsaras E et al., A longitudinal study of food insecurity on obesity in preschool children, 2012

Homework:
• Complete required readings for Oct 6 class.

Oct 6
Section 5: Childhood Overweight and Obesity – Prevention and Treatment
• Prevention approaches
• Treatment approaches

Required Readings:
• Brown Text: Ch 10, pp 288-291 and Ch 12, pp 326-330
• Spear BA et al., Recommendations for treatment of child and adolescent overweight and obesity. Pediatrics 2007

Additional Resources:
• See Ogden reference in Section 1 for childhood obesity rates in the US.
• RWJF Issue Brief: Declining childhood obesity rates – where are we seeing signs of progress? 2013
• Society for Behavioral Medicine (SBM) Position Statement: SBM supports retaining healthy school lunch policies

Homework:
• Complete required readings for Oct 11 class.

Oct 11
UNIT 4 Adolescent Nutrition (Samuel-Hodge)
Section 1: Growth and Nutrition During Adolescence
• Growth patterns
• Psychosocial development
• Nutrient needs and dietary recommendations

Required Readings:
• Brown Text: Ch 14: pp. 361-385

Additional Resources:

Homework:
• Complete required readings for Oct 13 class.

Oct 13  
Section 2: Promoting Healthy Eating and Physical Activity Behaviors

• Social and cultural factors
• Policy and environmental change approaches
• Focus on overweight and obesity (chronic disease prevention)

Required Readings:
• Brown Text: Ch 13, pp 349-352; Ch 14, pp 375-381

Recommended Reading:

Additional Resources:
• See Sakai.

Homework:
• Complete required readings for Oct 18 class.

Oct 18  
Section 3: Eating Disorders and Disordered Eating (Guest Speaker - TBD)

• Eating disorders – general overview and treatment approaches
• Role of nutrition in treatment

Childhood and Adolescence Case Study Released
Required Reading:
- Brown Text: Ch 15, pp 399-406

Recommended Reading:

Homework:
- Complete required readings for Oct 25 class.

Oct 20  
**FALL BREAK**

Oct 25  
**Section 4: Sports Nutrition (Guest Speaker - TBD)**
- Dietary recommendation for the child athlete
- Optimal body weight for young athletes
- Nutrition and dietary supplements, performance enhancing substances, and use of sports drinks

Required Readings:
- Brown Text: Ch 14, pp 381-384; Ch 15, pp 392-394

Recommended Reading:

Homework:
- Complete required readings for Oct 27 class and case study 16.1

Oct 27  
**UNIT 5 Adult Nutrition**

**Section 1: Adult Nutrition - Overview (Wasser)**
**Childhood and Adolescence Case Study Due**

**Required Readings:**
- Brown Text: Ch 16: pp. 408-427

**Class Participation:**
- In pairs, students will conduct 24-hour recalls, use SuperTracker and assess the shortfalls and excesses of their nutritional intake as compared to the DRIs and Healthy People 2020

**Homework:**
- Complete required readings for Nov 1 class.

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**Nov 1**  
**Section 2: Adult Nutrition - Conditions and Interventions (Holliday)**

**Adulthood Case Study Released**

**Required Readings:**
- Brown Text: Ch 17: pp. 428-453

**Homework:**
- Students will research their assigned non-profit or governmental agency and create a brief presentation (max 10 slides) outlining (1) the mission/focus, (2) scope of work/projects/advocacy, and (3) resources useful for dietitians

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**Nov 3**  
**Section 3: Adult Nutrition – Key Resources (Wasser)**

**Required Readings:**
- None

**Class Participation:**
- Students will be randomly selected to present on their non-profit or governmental agency. All students will be expected to participate in discussion.
  - American Heart Association ([http://www.heart.org/HEARTORG/](http://www.heart.org/HEARTORG/))
  - National Osteoporosis Foundation ([https://www.nof.org/](https://www.nof.org/))

**Homework:**
- Complete required readings for Nov 8 class.

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**Nov 8**  
**UNIT 6 Older Adults (Holliday)**

**Section 1: Understanding Global Aging and Physiological Changes During Aging**

**Adulthood Case Study Due**

**Required Readings:**
- Brown Text: Ch 18, pp 454-460
- Normal Changes of Aging
- PBS video: Aging (12:36)
- PBS: The Impact of Aging Populations
• Administration on Aging: A Profile of Older Americans: 2015
• Global Age-friendly Cities: A Guide (enjoy looking through)
• The 90+ Study

Homework:
• Complete required readings for Nov 10 class.

Nov 10
Section 2: Physiological Changes During Aging Continued

Required Readings:
• Brown Text: Ch 18, pp 461-465
• Frontline Living Old (watch the full program/6 Chapters, 60 mins)
• NY Times Article and Video: Experiencing Life, Briefly, Inside A Nursing Home-A Personal Lesson in Geriatric Care (5:22)
• Area Agency on Aging. What is normal aging?

Homework:
• Complete required readings for Nov 15 class.

Nov 15
Section 3: Older Adult Nutrition Screening, Assessment and Nutrient Recommendations

Required Readings:
• Brown Text: Ch 18, pp 465-485
• Administering the MNA on an older patient (12:32)
• Nutritional Care for Older People (22:14)

Homework:
• Complete required readings for Nov 17 class.

Nov 17
Section 4: Food Selection, Taste, Smell and Oral Health in Older Adults

Required Readings:
• Brown Text: Ch 19, pp 486-517
• Swallow: A Documentary – Dysphagia (15:00)
• Swallowing disorders - interpretation of radiographic studies
• Hormel Health Labs Take some time to learn about all the products available to individuals with dysphagia.

Homework:
• Complete required readings for Nov 22 class.

Nov 22
Section 5: Older Adult Nutrition Condition Management

Required Readings:
• ABC News: Virtual Dementia Tour (8:04)
• Inside the Brain: An Interactive Tour
• Diabetes in Older Adults: A Consensus Report (ADA and AGS, 2012)
• Video: Mini Mental State Examination (9:17), Actual Exam
• Stopping artificial nutrition and hydration: http://www.uptodate.com/contents/stopping-artificial-nutrition-and-hydration-at-the-end-of-life

Homework:
• Complete required readings for Nov 29 class.

Nov 24  THANKSGIVING

Nov 29  Section 6: Older Adult Condition Management Continued

Older Adult Case Study Released

Required Readings:
• Academy Position Statement: Food and Nutrition for Older Adults: Promoting Health and Wellness
• Academy Position Statement: Food and Nutrition Programs for Community-Residing Older Adults
• Elder Nutrition Programs: Overview

Dec 1  Section 7: Older Adult Condition Management Continued

Class Participation:
• Self-assessment

Dec 6  Section 8: End of Life Care and Nutrition

Reflections Due

Dec 8  Older Adult Case Study Due

Dec 10 Final Exam 12:00 - 3:00 pm location TBD