NUTC 269
Nutrition, Health, and Disease I: Pregnancy to Adolescence
Tufts University, Friedman School of Nutrition Science and Policy
Online Graduate Certificate Program
Nutrition Science for Health Professionals

SPRING 2017
(Jan 19, 2017 – April 23, 2017)

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Tufts Graduate Credit: 1.0

Prerequisite: None

Course Description:
This course examines the relationship between nutrition, health, and chronic disease spanning from pregnancy through the different stages of childhood. Energy and nutrient requirements to support pregnancy and lactation, as well as common nutrition related concerns during this life stage are addressed. Topics in pediatric nutrition encompass nutrient needs during infancy with an in depth focus on growth assessment and use of
standard growth and special needs of preterm and full term infants. The course identifies specific nutrient requirements at the various phases of growth and development, as well as feeding practices and eating behaviors that accompany each stage. Medical nutrition therapy associated with common nutritional disorders of children with developmental disability, chronic disease, and obesity is introduced. Given the increased health risks associated with obesity, a comprehensive review of nutrition screening, diet therapy, and clinician based education of parents and children at various age groups is provided.

**Course Objectives:**
By the end of the course, students will be able to:

- Discuss the key elements of nutritional assessment and diet therapy, describe their alterations during various disease states and relate this information to support nutrition intervention strategies in individuals during altered pathological states.
- Interpret information from medical, social and nutritional histories, combined with biochemical and anthropometrical indices during different pathophysiological states to assess nutritional status, develop nutrition care plans, and problem solve.
- Accurately define, both in writing and orally, how pathophysiology of a selected disease state impacts nutritional status and what nutrition interventions are indicated.
- Discuss controversy in the scientific literature related to medical nutrition therapy and implications for clinical practice.
- Develop skills for discussing nutrition related problems with patients and clients.


**Academic Conduct:**
Each student is responsible for upholding the highest standards of academic integrity, as specified in the Friedman School’s Policies and Procedures manual ([http://nutrition.tufts.edu/student/documents](http://nutrition.tufts.edu/student/documents)) and Tufts University policies ([http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic_Integrity.pdf](http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic_Integrity.pdf)). It is the responsibility of each student to understand and comply with these standards, as violations will be sanctioned by penalties ranging from failure on an assignment and the course to dismissal from the school.

**Class Policies and Expectations**
Student will have only one opportunity to complete each assignment, and all assignments are due on the date/time specified. Students will have only one opportunity to compete each exam. Each exam must be completed and successfully submitted within the specified time period. Students who are unable to complete an assignment on time for any reason should notify the instructors by email (preferred) or phone call prior to the deadline, with a brief explanation for why the extension is needed.

There are NO opportunities for extra credit work.
Students are expected to complete all assignments on their own, i.e. without assistance from other students, faculty, etc. unless otherwise noted. All outside documents used in the preparation of students' work must be properly referenced. (References to the textbook are not required).

Instructors and other university personnel may request that students submit written assignments to plagiarism prevention resources, websites, or other authoritative databanks, such as (but not limited to) “turnitin.com” or a similar site. These services compare students-produced documents with web content, newspapers, journals, magazines, books, student essays, and other data to determine the originality of student work.

Students are expected to familiarize themselves with and adhere to the official policies regarding academic integrity for Tufts University that are presented in this handbook: http://www.nutrition.tufts.edu/student/documents/policies-procedures

**Communication Policy:**
All communication will be sent to your Tufts email address. Please check it at least once a day. Students should try to seek out information for themselves before contacting the instructor. The answers to your questions may have already been posted by your peers or the instructors in the discussion board, which can be found on the Trunk course website. Please use the discussion board to post questions to your fellow students and the instructors about any course-related issues. If you cannot find your answer contact the instructors via email as soon as possible. Please do not wait until the last minute. Since students may not all be in the same time zone, you must give us time to respond to your question. Faculty will respond within 48 hours.

**Assessment and Grading:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Quizzes (5)</td>
<td>25%</td>
</tr>
<tr>
<td>Online Discussions</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Essay Review Paper</td>
<td>25%</td>
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</tbody>
</table>

**Grade Scale:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>98.50-100</td>
</tr>
<tr>
<td>A</td>
<td>92.50-98.49</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.49</td>
</tr>
<tr>
<td>B+</td>
<td>87.50-89.99</td>
</tr>
<tr>
<td>B</td>
<td>82.50-87.49</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.49</td>
</tr>
</tbody>
</table>
Credit towards earning a certificate will not be awarded for courses with a final grade below a B-, per Friedman School Policy.

Assignments and Submission Instructions:
Assignments for this course include readings, online lectures, “What Would You Do?” online discussions, weekly quizzes, a midterm exam, and an essay review paper. For the most up to date information regarding assigned readings, instructions, and due dates please login to your Trunk course site and click on the tab labeled “Weekly Overviews.”

Readings
Students are required to complete all required readings and watch each lecture. Readings will come from the textbook and/or scientific journals. Supplemental readings, although not required, may also be posted and are highly recommended.

Online Quizzes
Online Quizzes are also provided to enhance your learning experience. The quiz questions will come from that week’s lecture and assigned readings. You will take the quiz on the Trunk website. The quizzes will be available only until 11:59 EST Sunday of the assigned week. There will be absolutely no make-up quizzes. Quizzes will be timed with a time limit of 45 minutes per quiz. Quizzes can be taken a maximum of two times and the highest of the two scores will be recorded. There are 5 online quizzes each worth 20% of your Online Quiz grade.

“What Would You Do?” Online Discussions
There will be three “What Would You Do?” (WWYD) web based discussions on common nutritional problems and concerns that are encountered at various stages of pregnancy through adolescence. The purpose of this exercise is to help you identify the common problems at each stage, understand the scientifically based evidence surrounding them, and assimilate this information in a way that will allow you to provide recommendations to patients and clients. Addressing the need for weight management, providing education for adolescences on healthy food choices, exercising cultural competency surrounding food related behaviors, dispelling myths, and answering basic questions on nutrition are included as WWYD discussion topics. Supplementary materials will be used to introduce each discussion. Ideal discussions are ones in which all members provide their views incorporating science as well as practical applications, and possibly personal and/or professional experience, on the topics. All initial posts should be a minimum of 100 words in length and are due on Thursday of the assigned week at 11:55 PM eastern time. All reply posts, which should also be a minimum of 100 words in length, are due by Sunday of the assigned week by 11:55 PM eastern time. Additional posts beyond the initial and follow up posts are encouraged to generate vigorous discussion. These additional posts do not have a required word count. There are 3 WWYD discussions each worth 20% of your Online Discussion grade.

Clinical Controversy Online Discussion
There will be one Clinical Controversy online discussion which serves to highlight a current controversy in practice. You will be asked to choose a position and defend it as a practice standard. This is a more formal online discussion than the WWYD online discussions. The initial post should be between 250-400 words in length and is due on Thursday April 13, 2017 by 11:55 PM eastern time. After all of the initial posts are completed by your fellow students, choose one to reply to, and indicate to the group, in 200 – 250 words, whether it is similar or different from your opinion and what we can learn from these differences or similarities of opinion. In order to prevent overlap, please indicate on the discussion board when you have chosen a posting to reply to. Do this by creating a reply to that initial posting and in the subject line put, "Claimed by [your name]." No other student should choose an initial posting that has already been claimed. All reply posts are due by Sunday April 16, 2017 by 11:55 PM eastern time. There is one Clinical Controversy discussion worth 40% of your Online Discussion grade.

Midterm Exam
The first half of the course will cover the Basic Core Lecture sessions (Nutrition in Pregnancy, Lactation, Infancy, Childhood, and Adolescence). The exam will cover this material.

Essay Review Paper (approximately 6-8 pages, double-spaced)
The paper topic will be chosen by the student and approved by the instructors by March 19, 2017. Topics should not be one that is presented as part of the scheduled lectures. The paper should focus on the nutritional implications and management in the specific disease state. An overview of physiological mechanisms of the disease and aspects of treatment should be included. Paper should include an introduction, review of literature, discussion of important findings, and conclusion. The conclusion should include directions of the future research and controversies if applicable.

The following guidelines are used in evaluating course performance:
1. Assignments will be evaluated on the basis of completeness, originality, scientific soundness and relevance to the assigned topic
2. Written work will be evaluated on the quality of thought, completeness, and adherence to guidelines, scientific integrity, and ability to incorporate and communicate ideas and information effectively.
3. Adherence to instructions and guidelines of the assignments.
4. Participation in all class activities and discussion. Missed work will affect your grade unless prior arrangements were requested and approved in writing by the instructors for make-up work.
5. On-line discussions will be evaluated according to the discussion matrix.
### Online WWYD Discussion Assignment Grading Criteria

<table>
<thead>
<tr>
<th>Quality of Posting/Reply</th>
<th>Points</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Posting or postings are not relevant to discussion posed</td>
<td>0</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>Posting reflect reading and are relevant to questions posed. Only 1 posting noted and/or postings did not meet word count requirements.</td>
<td>1</td>
<td>Met minimum standards</td>
</tr>
<tr>
<td>Postings show a strong grasp of material, original thought with solid facts to back-up opinions and statements. Directly contributes to the discussion and communicates well with other students. Shows an ability to apply nutrition related topics to real life situations. At least 2-3 quality postings meeting word count requirements.</td>
<td>2</td>
<td>Exceeded minimum standards</td>
</tr>
</tbody>
</table>
Accommodation of Disabilities:
Tufts University is committed to providing equal access and support to all students through the provision of reasonable accommodations so that each student may access their curricula and achieve their personal and academic potential. If you have a disability that requires reasonable accommodations please contact the Friedman School Assistant Dean of Student Affairs at 617-636-6719 to make arrangements for determination of appropriate accommodations. Please be aware that accommodations cannot be enacted retroactively, making timeliness a critical aspect for their provision.

Technical Support

Online course support is provided by Friedman support staff and/or IT Support. Please do not contact faculty or TA's for technical support.

- **Telephone:** (617) 627-3376
- **Email:** trunk@tufts.edu
- **Hours:** 24 hours a day, seven days a week.

When reporting a problem, please include:

- The name and number of your online course (e.g. "NUTC 269 Online")
- Your operating system and browser
- A detailed description of the problem

This information will expedite the troubleshooting process. If you are sending a support request via email, please use your Tufts email address.

Many problems with Trunk are a result of using an unsupported browser. Please make sure you are using an up-to-date version of Firefox or Internet Explorer, especially when using communication and assessment tools within Trunk.
**Course Schedule:** *This schedule is subject to modification at the instructors’ discretion*

<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Chapter Readings (Krause)</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 19 - Jan 21</td>
<td>1</td>
<td>Course Introduction Introduction to Nutrition</td>
<td>Kelly Kane and Kathy Prelack</td>
<td>4</td>
<td>Introductions</td>
</tr>
<tr>
<td>Jan 23 – Jan 29</td>
<td>2</td>
<td>Nutrition in Pregnancy</td>
<td>Kelly Kane</td>
<td>15 - pages 239-280</td>
<td>Quiz 1 due 1/29 By 11:59 pm EST</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lactation, Breast Milk, and Formula</td>
<td>Kelly Kane</td>
<td>15 - pages 281-299 and Ch 16 pages 304-307</td>
<td>Quiz 2 due 2/5 By 11:59 pm EST WWYD 1 - What Should Mom be Eating?: Food Intolerances and other Concerns of Lactating Mothers</td>
</tr>
<tr>
<td>Feb 6 – Feb 12</td>
<td>4</td>
<td>Nutrition in Infancy</td>
<td>Kathy Prelack</td>
<td>16</td>
<td>Quiz 3 due 2/12 By 11:59 pm EST</td>
</tr>
<tr>
<td>Feb 13 – Feb 19</td>
<td>5</td>
<td>Nutrition in Childhood</td>
<td>Kathy Prelack</td>
<td>17</td>
<td>Quiz 4 due 2/19 By 11:59 pm EST</td>
</tr>
<tr>
<td>Feb 20 – Feb 26</td>
<td>6</td>
<td>Nutrition in Adolescence</td>
<td>Kathy Prelack</td>
<td>18</td>
<td>Quiz 5 due 2/26 By 11:59 pm EST Exam Assigned</td>
</tr>
<tr>
<td>Feb 27 – Mar 5</td>
<td>7</td>
<td>Preterm Infants</td>
<td>Guest: Danielle Duggan, RD</td>
<td>42</td>
<td>No Quiz this week Exam Due 3/5 By 11:55 pm EST</td>
</tr>
<tr>
<td>Mar 6 – Mar 12</td>
<td>8</td>
<td>Food Allergies</td>
<td>Guest: John Leung, MD</td>
<td>26</td>
<td>WWYD 2 - Gluten-free, organic, non-GMO foods, food alternatives for kids with allergies – common questions from Moms for their children</td>
</tr>
<tr>
<td>Mar 13 – Mar 19</td>
<td>9</td>
<td>Failure to Thrive</td>
<td>Guest: Annie Paquette, MS, RD</td>
<td>Pages 321-326</td>
<td>Paper Topics Due by March 19 By 11:55 pm EST</td>
</tr>
<tr>
<td>Mar 20 – Mar 26</td>
<td>10</td>
<td>Pediatric Obesity</td>
<td>Guest: Dara Borto, MS, RD</td>
<td>Pages 400-404</td>
<td>WWYD 3 - How to Talk to Children and Families about Weight Management</td>
</tr>
<tr>
<td>Mar 27 – Apr 2</td>
<td>11</td>
<td>Eating Disorders</td>
<td>Guest: Natalie Faella, MS, RD</td>
<td>22</td>
<td>Essay Review Paper Outline Due 4/2 By 11:55 pm EST</td>
</tr>
<tr>
<td>Apr 3 – Apr 9</td>
<td>12</td>
<td>Nutrition in Developmental Disabilities</td>
<td>Guest: Jennifer Hall, MS, RD</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>
Weekly Course Topics, Learning Objectives, and Assignments:
This schedule is subject to modification at the instructors’ discretion

Week 1 Introduction to Nutrition (Kelly Kane and Kathy Prelack)
Upon completion of this week, students will be able to:
- Describe the importance of nutrition in maintenance of health and prevention of disease in the lifecycle phase of pregnancy through adolescence.

Preparation:
- Read Krause Ch. 4
- Watch Introduction video

Assignments for this week:
- Introduction discussion

Week 2 Nutrition in Pregnancy (Kelly Kane)
Upon completion of this week, students will be able to:
- Identify the critical phases of growth and fetal development during pregnancy
- Describe the nutrient needs during pregnancy
- List the common nutritional concerns during pregnancy
- Identify high risk pregnancies and their nutritional implications

Preparation:
- Read Krause Ch. 15 - pages 239-280
- Watch Nutrition in Pregnancy lecture

Assignments for this week:
- Complete Quiz 1 by 1/29/17 by 11:59 pm EST

Week 3 Lactation, Breast Milk, and Formula (Kelly Kane)
Upon completion of this week, students will be able to:
- Describe the physiology of lactation and obstacles to lactation
- Define nutrient requirements during lactation
- Describe the composition of breast milk
- List standard and specialty infant formulas and their characteristics
Preparation:
- Read Krause Ch. 15 – pages 284-299, and Ch. 16 pages 304-307
- Watch Lactation, Breast Milk, and Formula lecture
- Optional Reading:

Assignments for this week:
- Complete Quiz 2 by 2/5/17 by 11:59 pm EST
- Participate in “What Would You Do?” (WWYD1) online discussion
  - Initial post by Thursday 2/2/17 by 11:55 pm EST
  - Follow up post by Sunday 2/5/17 by 11:55 pm EST

**Week 4 Nutrition in Infancy (Kathy Prelack)**
Upon completion of this week, students will be able to:
- Assess nutritional status and growth during infancy
- Describe the nutrient requirements of infants
- List the stages of solid food introduction for infants and associated developmental cues
- Describe common feeding problems of infants

Preparation:
- Read Krause Ch. 16
- Watch Nutrition in Infancy lecture

Assignments for this week:
- Complete Quiz 3 by 2/12/17 by 11:59 pm EST

**Week 5 Nutrition in Childhood (Kathy Prelack)**
Upon completion of this week, students will be able to:
- Describe patterns of growth during childhood
- Determine nutrient requirements during childhood
- List common nutritional problems during childhood

Preparation:
- Read Krause Ch. 17
- Watch Nutrition in Childhood lecture

Assignments for this week:
- Complete Quiz 4 by 2/19/17 by 11:59 pm EST
Week 6 Nutrition in Adolescence (Kathy Prelack)
Upon completion of this week, students will be able to:
- Determine unique nutritional needs of adolescents
- Describe social and environmental influences on eating behaviors in adolescence
- List the nutritional risk factors among adolescence

Preparation:
- Read Krause Ch. 18
- Watch Nutrition in Adolescence lecture

Assignments for this week:
- Complete Quiz 5 by 2/26/17 by 11:59 pm EST
- Exam assigned 2/26/17

Week 7 Preterm Infants (Danielle Duggan)
Upon completion of this week, students will be able to:
- Define prematurity and classifications of low birth weight.
- Describe the nutritional needs and unique challenges faced by premature and low birth weight infants.

Preparation:
- Read Krause Ch. 42
- Watch Nutrition in Preterm Infants lecture

Assignments for this week:
- Exam due 3/5/17 by 11:55 EST
- No Quiz due this week (No additional quizzes for the remainder of the course)

Week 8 Food Allergies (John Leung, MD)
Upon completion of this week, students will be able to:
- Describe the relationship between food allergens and the immunological response.
- Distinguish between food allergies, food intolerances, and food sensitivities.
- Identify symptoms related to food allergies and food intolerances.
- Define Celiac Disease and identify approaches to nutritional management.

Preparation:
- Read Krause Ch. 26
- Watch Food Allergy lecture
- Optional Readings:
Assignments for this week:
• Participate in “What Would You Do?” (WWYD2) online discussion
  o Initial post by Thursday 3/9/17 by 11:55 pm EST
  o Follow up post by Sunday 3/12/17 by 11:55 pm EST

**Week 9: Failure To Thrive (Annie Paquette, MS, RD)**
Upon completion of this week, students will be able to:
• Define Failure to Thrive and its potential causes
• Calculate catch up growth requirements
• List strategies for promoting growth in children with failure to thrive

Preparation:
• Read Krause pages 321-326
• Watch Failure to Thrive lecture
• Optional Reading:

Assignments for this week:
• Submit Essay Review Paper topic by Sunday 3/19/17 by 11:55 EST

**Week 10 Pediatric Obesity (Dara Borto, MS, RD)**
Upon completion of this week, students will be able to:
• Define obesity in children
• Identify the contributors to pediatric obesity
• Describe treatment approaches

Preparation:
• Read Krause pages 400-404
• Watch Pediatric Obesity lecture
• Optional Reading:

Assignments for this week:
• Participate in “What Would You Do?” (WWYD3) online discussion
  o Initial post by Thursday 3/23/17 by 11:55 pm EST
  o Follow up post by Sunday 3/26/17 by 11:55 pm EST
Week 11 Eating Disorders (Natalie Faella, MS, RD)
Upon completion of this week, students will be able to:

- Recognize the differences between disordered eating and eating disorders
- Identify nutrition related consequences of disordered eating and eating disorders
- Describe the role of nutrition intervention in the treatment of eating disorders

Preparation:

- Read Krause Ch. 22
- Watch Eating Disorders lecture
- Optional Reading:

Assignments for this week:

- Submit Essay Review Paper outline by 4/2/17 by 11:55 EST

Week 12 Nutrition in Developmental Disabilities (Jennifer Hall, MS, RD)
Upon completion of this week, students will be able to:

- Describe various developmental disabilities, such as cerebral palsy, autism, attention deficit-hyperactivity disorder
- Identify nutrition related concerns of these populations and interventions to address these concerns

Preparation:

- Read Krause Ch. 44
- Watch Nutrition in Developmental Disabilities lecture

Assignments for this week:

- No assignments due this week

Weeks 13 Clinical Controversy Panel (Kathy Prelack and Kelly Kane)
Upon completion of this week, students will be able to:

- To critically review scientific literature related to a controversial clinical topic
- To develop skills in persuasive argument related to a clinical topic
- To develop skills to defend a position related to a clinical topic

Preparation of class:

- Read assigned journal articles

Assignments for this week:

- Participate in Clinical Controversy online discussion
  - Initial post by Thursday 4/13/17 by 11:55 pm EST
Follow up post by Sunday 4/16/17 by 11:55 pm EST

Finals Week Essay Paper (Kathy Prelack and Kelly Kane)

Upon completion of this week, students will be able to:

- Develop scientific writing skills
- Develop methodology for formal review scientific literature related to a specific disease state or condition
- Identify and describe in writing the background and pertinent aspects of disease states and their dietary implications

Preparation: ---

Assignments for this week:

- Submit final draft of Essay Review Paper by 4/23/17 by 11:55 pm EST