

ADVANCED MEDICAL NUTRITION THERAPY

Nutrition 316

Spring 2019

Time and location of the course: Wednesdays 1:30 pm – 4:30 pm; Location: Room 118

Instructors :

Kathy Prelack, PhD, RD

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Office Hours: by appointment

Kelly Kane, MS, RD, LDN, CNSC

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Office Hours: by appointment

Tufts Graduate Credit: 3 credits

Prerequisites for taking this course: Graduate standing or instructor consent

Course Description: The goal of the course is to expand students' knowledge on a variety of common pathophysiological conditions and integrate this knowledge with the intervention of clinical nutrition therapies.

Course Objectives:

At the completion of the course, students should be able to:

1. 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.
2. 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.
3. Accurately define, both in writing and orally, how pathophysiology of a selected disease state impacts nutritional status and what nutrition interventions are indicated.

Description of assignments, tests, and other required activities:

Assignments for this course include readings, online and in person lectures, in class assignments, one take home exam, three case studies, a clinical controversy discussion and an essay review paper and paper presentation. 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 and Lectures

Students will be expected to read the assigned background materials prior to coming to class

and/or listen to the pre-recorded lectures as applicable each week. Familiarity with the recorded lectures will be necessary in order to understand the in-class assignments and activities. Supplemental readings, although not required, may also be posted and are highly recommended.

Take Home Midterm Exam

The first half of the course will focus on the core subject areas of nutrition assessment and nutritional therapy during pathophysiology. The take home exam will assess this material.

Clinical Controversy Discussion

There will be one Clinical Controversy discussion which serves to highlight a current controversy in practice. You and your group members will be asked to take a specific position on a clinical topic that is currently controversial. You will need to identify 1 peer reviewed journal article that supports your position, while your "opponents" will research the alternate view. You will be asked to represent your position and defend it as a practice standard.

Case Studies

There will be three case studies during the semester. Topics in specific pathological states and methods of nutritional therapy during these disease states that are presented in the lectures both by the instructors and guest lecturers will be addressed and students will answer questions based on the case studies.

Essay Review Paper (approximately 10-15 pages, double-spaced)

Paper topic will be chosen by the student and approved by the instructors. Paper topics are due on 3/27/19 and will be discussed in class. Topic should not be one that is presented as part of the scheduled lectures, although special instances of a general topic discussed in during lecture is acceptable. The paper should reflect the current state of knowledge in the particular area as supported by research and expert opinion in the field. The content's focus should be on the nutritional implications and dietary management of the specific disease state or condition. 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.

Essay Review Paper Presentation

A presentation of your paper will take place during the last class. Each student will present their topic orally to the class and will be graded by their peers. The presentation should be no longer than 10-15 minutes in length.

Summary of Assignments and Grading

Assignment(s)	Grading Weight
Take Home Midterm Exam	20%

Clinical Controversy	20%
Case Studies (3)	30%
Paper	20%
Paper Presentation	10%
TOTAL	100%

Grade Scale

Grade	Score	Grade	Score	Grade	Score
A+	100	C+	77-79.99	F	0-59.99
A	94-99.99	C	74-76.99		
A-	90-93.99	C-	70-73.99		
B+	87-89.99	D+	67-69.99		
B	84-86.99	D	64-66.99		
B-	80-83.99	D-	60-63.99		

Class Policies, Expectations, and Evaluation

Students 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 the 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 student-produced documents with web content, newspapers, journals, magazines, books, student essays, and other data to determine the originality of student work.

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.

Required course text and Materials:

Kane K and Prelack K, eds. *Advanced Medical Nutrition Therapy*, Burlington, MA. Jones and Bartlett Learning; 2019. ISBN-13 9781284042634, ISBN-10 1284042634

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>) and Tufts University policies ([http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic Integrity.pdf](http://uss.tufts.edu/studentaffairs/judicialaffairs/Academic%20Integrity.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.

Course & Assignment Schedule:

DATE	WEEK and TIME	TOPIC OR CLASS TITLE	ASSIGNMENTS & ACTIVITIES	LECTURER(S)
1/16/19	1 1:30-3:00 3:00-4:30	Introduction Nutrition Focused Physical Assessment (live) Nutritional Assessment (recorded) Biochemical Assessment (recorded)	Nutrition- focused Physical Examination lecture in class	Kelly Kane MS, RD Kathy Prelack, PhD, RD
1/23/19	2 1:30 -3:00 Dental 773	Pediatric Assessment activity (live)	Pediatric Assessment activity in class	Annie Paquette, MS, RD

1/30/19	3	Nutrition in Pediatrics (recorded) Nutrition in Developmental Disabilities (recorded)	No face to face class meeting this week	Kathy Prelack, PhD, RD
2/6/19	4	Energy Expenditure, Body Composition and Metabolic Support in Critical Illness (recorded) 1:30-3:00 Energy Expenditure (live) 3:00-4:30 Neonatal Nutrition (live)	Energy Expenditure and Neonatal Nutrition lectures in class	Kathy Prelack, PhD, RD Kelly Kane MS, RD Linda Bandini, PhD, RD Yvette Penner, RD
2/13/19	5	1:30-3:00 Enteral Nutrition Support 3:00-4:30 Immunonutrition	EN and Immunonutrition lectures in class	Kathy Prelack, PhD, RD Kelly Kane MS, RD
2/20/19	6	1:30-3:00 Parenteral Nutrition Support 3:00-4:30 Calculation practice <i>Exam Assigned</i>	PN lecture and practice in class	Kelly Kane MS, RD Kathy Prelack, PhD, RD
2/27/19	7	1:30-3:00 Eating Disorders (recorded) Obesity (live) Nutritional Management of Childhood Obesity (recorded) <i>Exam Due</i>	Obesity lecture in class	Kelly Kane, MS, RD Lauren Fialkoff, MS, RD and Jillian Reece, RD Kathy Prelack, PhD, RD
3/6/19	8	Liver Disease (recorded) 1:30-3:00 Nutrition in Solid Organ Transplantation (live) <i>Liver Disease Case Study assigned</i>	Solid Organ Transplant lecture in class	Kelly Kane, MS, RD Lauren Parsly, RD Kathy Prelack, PhD, RD
3/13/19	9	Nutrition and Oral Health	Cancer lecture in	Carole Palmer, EdD, RD

	1:30-3:00	(recorded) Cancer (live) <i>Liver Disease Case Study Due</i> <i>Clinical Controversy Introduced</i>	class	Alicia Romano, MS, RD Kelly Kane MS, RD Kathy Prelack, PhD, RD
3/20/19	SPRING BREAK/ No Class			
3/27/19	10 1:00-4:30	Clinical Controversy <i>Paper Topics Due</i>	Panel Discussion	Kathy Prelack, PhD, RD Kelly Kane MS, RD
4/3/19	11 1:30-3:00 3:00-4:30	Cardiometabolic Disease (live) Diabetes Mellitus (live) <i>Diabetes Case Study Assigned</i>	Cardiometabolic disease and DM lectures in class	Gitanjali Singh, MPH, PhD Richard Siegel, MD Kathy Prelack, PhD, RD
4/10/19	12 1:30-3:00	Maldigestion (recorded) Malabsorption (recorded) Probiotics (live) <i>Diabetes Case Study Due</i> <i>Gastroenterology Case Study Assigned</i>	Probiotics lecture in class	Kathy Prelack, PhD, RD Joel Mason, MD Kelly Kane, MS, RD
4/17/19	13 1:30-3:00	Renal Disease (live) Nutrition in Renal Disease (live) <i>Gastroenterology Case Study Due</i>	Renal Disease lecture in class Nutrition in Renal Disease lecture in class	Dan Weiner, MD Poon Har Poon, MS, RD Kelly Kane, MS, RD Kathy Prelack, PhD, RD
4/24/19	14 1:30-3:00	Case Study Review (live)	Allergy lecture and case study review in	Kelly Kane MS, RD

	3:00-4:30	Allergy (live)	class	John Leung, MD Kathy Prelack, PhD, RD
5/1/19	READING PERIOD 1:30-4:30	Class Presentations	Student Presentations in class	Kelly Kane MS, RD Kathy Prelack, PhD, RD
5/8/19	FINALS PERIOD 1:30-4:30	Class Presentations <i>Paper Due</i>	Student Presentations in class	Kathy Prelack, PhD, RD Kelly Kane MS, RD

This schedule is subject to modifications at the discretion of the instructors.

Course Schedule

Class 1: Nutritional and Biochemical Assessment

Instructors: Kane, Prelack

1/16/19

Learning Objectives for class 1: Upon completion of this class, students will be able to:

Nutritional Assessment (recorded) and Nutrition Focused Physical Exam(live):

- Identify the types of malnutrition and the role of malnutrition in hospitalization.
- Define and differentiate between nutrition screening and nutrition assessment.
- Name the components of a nutrition assessment and describe the features of each.
- Identify the physical features that can be influenced by an individual's nutritional status.

Biochemical Assessment (recorded):

- Identify the serum electrolytes and symptoms and potential causes of deficiencies and excesses.
- Name at least 2 markers of visceral protein status and the advantages and disadvantages associated with the use of each.
- Identify the components of a complete blood count and iron study and the role of each in the diagnosis of macrocytic and microcytic anemias.

Readings for class 1:

Kane and Prelack: Chapters 1 and 2
MQii Malnutrition Recognition Guide

White JV, Guenter P, Jensen G, et al. Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition (Undernutrition) *J Acad Nutr Diet.* 2012;112:730-738.

Class 2: Pediatric Nutrition Assessment Activity and Failure to Thrive:

Instructors: Prelack, Kane, Paquette

1/23/19

Learning Objectives for class 2: Upon completion of this class, students will be able to:

Pediatric Nutrition Assessment Activity and Failure to Thrive (live):

- Practice pediatric nutrition evaluation through growth chart utilization.
- Describe medical nutrition therapy in the management of failure to thrive.
- Define pediatric malnutrition and failure to thrive and the criteria for its diagnosis.
- Describe the role of medical nutrition therapy and the role of the registered dietitian in the management of failure to thrive.

Required Readings for class 2:

Kane and Prelack: Chapter 23

Class 3: Pediatrics and Developmental Disabilities

Instructors: Prelack, Kane (no face to face class)

1/30/19

Learning Objectives for class 3: Upon completion of this class, students will be able to:

Nutrition in Pediatrics (recorded):

- Describe assessment of nutritional status in children using appropriate tools and markers.
- Define energy and protein requirements in well and diseased children.
- Identify specific nutritional concerns during the nutritional support and management of hospitalized pediatric patients.

Nutrition in Developmental Disabilities (recorded):

- Describe various developmental disabilities, such as cerebral palsy, autism, ADHD, and Down Syndrome
- Identify nutrition related concerns of these populations and interventions to address these concerns.

Required Readings for class 3:

Kane and Prelack: Chapters 23 and 26

Supplementary Readings:

Corkins KG. Nutrition-focused physical examination in pediatric patients. *Nutr Clin Pract.* 2015;30:203-209.

Class 4: Metabolic Support in Critical Illness, Energy Expenditure, and Nutrition in Neonatology

Instructors: Prelack, Kane, Bandini, Penner

2/6/19

Learning Objectives for class 4: Upon completion of this class, students will be able to:

Body Composition and Metabolic Support in Critical Illness (recorded):

- Understand the inflammatory response following critical illness and the metabolic sequelae that accompanies it particularly as it relates to energy and protein metabolism.
- Identify the effects of physiologic stress and altered nutrition on body composition.
- Determine appropriate goals for nutrition support using information related to energy expenditure, and protein turnover, and substrate utilization during critical illness.
- Using the burn injury model, apply the concepts of assessment and metabolic support in critically ill.

Energy Expenditure (live):

- Identify the components of energy expenditure.
- Name the methodologies available for determining energy needs and the advantages and disadvantages of each.
- Describe the methods used in calculating daily energy needs, resting metabolic rate, and daily energy expenditure.

Nutrition in Neonatology (live):

- Describe assessment of nutritional status in premature infants using appropriate tools and markers.
- Identify specific nutritional concerns during the nutritional support and management of premature infants.
- Describe the role of medical nutrition therapy and the role of the registered dietitian in the NICU.

Readings for class 4:

Kane and Prelack: chapters 5, 6, and 22

Supplementary Readings:

Flack KD, Siders WA, Johnson L, et al. Cross-validation of resting metabolic rate prediction equations. *J Am Diet Assoc.* 2016;116:1413-1422.

Frankenfield D, Ashcraft CM. Estimating energy needs in nutrition support patients. *J Parenter Enteral Nutr.* 2011;35:563-570.

Frankenfield DC, Coleman A. An evaluation of a handheld calorimeter against a standard calorimeter in obese and nonobese adults. *J Parenter Enteral Nutr.* 2013;37:652-8.

Frankenfield D, Roth-Yousey L, Compher C. et al. Comparison of predictive equations for resting metabolic rate in healthy non obese and obese adults: a systemic review. *J Am Diet Assoc.* 2005;105:775-789

Hemysfield SB, Harp JB, Rowell AM, Nguyeg AM and Pietrobelli A. How much may I eat? Calorie estimates based upon energy expenditure prediction equations. *Obesity Reviews.* 2006;7:361-370.

Madden AM, Mulrooney HM, Shah S. Estimation of energy expenditure using prediction equations in overweight and obese adults: a systematic review. *J Hum Nutr Diet.* 2016;29:458-476.

Psota T and Chen KY. Measuring energy expenditure in clinical populations: rewards and challenges. *Eur J Clin Nutr.* 2013;67(5):436-442.

Rodriguez, NA, Jesche MG, Williams, FN, Kamolz, LP, Herndon, D. Nutrition in burns: Galveston contributions. *J Parenter Enteral Nutr.* 2011;35:704-714.

Schoeller D. Making indirect calorimetry a gold standard for predicting energy requirements for institutionalized patients. *J Am Diet Assoc.* 2007;107:390-392.

Steinberg A, Manhot C, Cordeiro K. Determining the accuracy of predictive energy expenditure (PREE) equations in severely obese adolescents. *Clin Nutr.* 2017;36(4):1158-1164.

Class 5: Enteral Nutrition Support and Immunonutrition

Instructors: Prelack, Kane

2/13/19

Learning Objectives for class 5:

Enteral Nutrition Support and Immunonutrition (live):

- Describe different types of enteral feedings, their distinguishing characteristics, and how they are given.
- Determine appropriate route, timing and composition of enteral feeding in various patient settings.
- Identify tube feedings complications and strategies for their management.
- Describe composition of specialty enteral feedings and indications for their use.
- Calculate a sample enteral nutrition regimen.

Required Readings for class 5:

Kane and Prelack: Chapter 3

Class 6: Parenteral Nutrition Support

Instructors: Kane, Prelack

2/20/19

Learning Objectives for class 6:

Parenteral Nutrition Support (live):

- Name the components of parenteral nutrition.
- Identify the indications and contraindications for central and peripheral parenteral nutrition.
- Describe the potential mechanical and metabolic complications associated with parenteral nutrition.

Class 7: Eating Disorders, Obesity, and Childhood Obesity

Instructors: Kane, Prelack, Reece, Fialkoff

2/27/19

Learning Objectives for class 7: Upon completion of this class, students will be able to:

Eating Disorders (recorded):

- Recognize the differences between disordered eating and eating disorders, and classify eating disorders.
- Identify nutrition related consequences of disordered eating and eating disorders.
- Describe the role of the registered dietitian and of medical nutrition therapy in the treatment of eating disorders.

Obesity (live):

- Define adult obesity.
- Describe the relationship between obesity and health.
- Identify useful methods of nutrition assessment in obesity.
- Describe both medical and surgical treatment approaches to obesity and their success rates.

Childhood Obesity (recorded):

- Define childhood obesity and the criteria for its diagnosis.
- Describe assessment of nutritional status in children with obesity using appropriate tools and markers.
- Identify intervention and treatment methods in childhood obesity.
- Describe the role of medical nutrition therapy and the role of the registered dietitian in the management of childhood obesity.

Readings for class 7:

Kane and Prelack: Chapters 25, 8, 24

Supplementary Readings:Jesuit C, Dillon C, Compher C., Lender C, et al. A.S.P.E.N. Clinical Guidelines: Nutritional Support of Hospitalized Pediatric Patients with Obesity. *J Parenter Enteral Nutr.* 2010; 34(1):13-20.

Barlow SE. Expert Committee Recommendations Regarding the Prevention, Assessment and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. *Pediatrics*. 2007;120;S164.

Class 8: Liver Disease and Solid Organ Transplantation

Instructors: Kane, Prelack, Parsly

3/6/19

Learning Objectives for class 8: Upon completion of this class, students will be able to:

Liver Disease (recorded):

- Describe the association of between liver disease and malnutrition.
- Name the possible causes and treatment of various types of liver disease.
- Identify the signs and symptoms of liver disease and the nutritional implications of each
- Define the consequences of liver disease (i.e. portal hypertension, varices, ascites, and hepatic encephalopathy) and describe the nutritional management of each.

Solid Organ Transplantation (live):

- Describe medical nutrition therapy post solid organ transplant, including liver, cardiac, and renal transplants.
- Describe the nutritional implications of common medications in solid organ transplants.

Readings for class 8:

Kane and Prelack: Chapters 15 and 18

Liver Disease Case Study Assigned

Class 9: Nutrition and Oral Health, Cancer

Instructors: Kane, Prelack, Palmer, Romano

3/13/19

Learning Objectives for class 9: Upon completion of this class, students will be able to:

Nutrition and Oral Health (recorded):

- Describe the interrelationship between nutrition and oral health.
- Outline common oral problems through the life cycle.
- Identify how poor oral health affects nutritional status and how to eat for optimal oral health

Cancer (live):

- Define cancer, identify types of cancer, potential causes, and treatment options.
- Identify the nutritional implications associated with cancer and its treatment.
- Describe conventional nutritional therapies and complementary and alternative

medicine in cancer treatment

Readings for class 9:

Kane and Prelack: Chapters 11 and 19

Liver Disease Case Study Due

Clinical Controversy Topics Assigned

Class 10: Clinical Controversy Panel Discussion

Instructors: Prelack, Kane

3/27/19

Learning Objectives for class 10: Upon completion of this class, students will be able to:

- Interpret scientific research as presented in peer reviewed journals
- Abstract relevant information
- Communicate findings effectively and persuasively to others

Readings for class 10:

Barraud D, Blard C, Hein F, et al. Probiotics in the critically ill patient: a double blind, randomized, placebo-controlled trial. *Intensive Care Med.* 2010;36:1540–1547.

Morrow L, Kollef MH, Cassale TB. Probiotic prophylaxis of ventilator-associated pneumonia: a blinded randomized controlled trial. *Am J Respir Crit Care Med.* 2010; 182:1058–1064.

Pontes-Arruda A, Martins LF, de Lima SM, et al. Enteral nutrition with eicosapentaenoic acid, gamma-linolenic acid and antioxidants in the early treatment of sepsis: results from a multicenter, prospective, randomized, double-blinded, controlled study: the INTERSEPT Study. *Critical Care* 2011, 15:R144.

Rice TW, Wheeler AP, Thompson BT, deBoisblanc BP, Steingrub J, Rock P. Enteral omega-3 fatty acid, gamma-linolenic acid, and antioxidant supplementation in acute lung injury. *JAMA.* 2011;306(14):1574-1581.

The NICE-SUGAR Study Investigators. Intensive versus conventional glucose control in critically ill patients. *N Engl J Med.* 2009;360:1283-97.

Van den Berghe G, Wouters P, Weekers F et al. Intensive insulin therapy in critically ill patients. *N Engl J Med,* 2001; 345(19):1359-1367.

Class 11: Cardiometabolic Disease and Diabetes Mellitus

Instructors: Prelack, Singh, Siegel

4/3/19

Learning Objectives for class 11: Upon completion of this class, students will be able to:
Cardiometabolic Disease (live):

- Describe the role of dietary modifications in the prevention and treatment of cardiovascular disease.

Diabetes Mellitus (live):

- Identify the 4 classifications of DM and describe the features and risk factors of each.
- Name the classes of human insulins and analogues and describe the method of action of each.
- Describe the components of medical nutrition therapy for type 1 and type 2 DM.

Readings for week 11:

Kane and Prelack: chapters 9 and 10

Supplementary Readings:

American Diabetes Association. Lifestyle management in diabetes, 2018. *Diabetes Care*. 2018; 41(1):S38-S50.

Ajala O, English P, Pinkney J. Systematic review and meta-analysis of different dietary approach to the management of type 2 diabetes. *Am J Clin Nutr*. 2013;97:505–16.

Elia M, Cerriello A, Laube H, et al. Enteral nutritional support and use of diabetes-specific formulas for patients with diabetes. *Diabetes Care*. 2005;28(9): 2267-2279.

Garner C, Wylie-Rosett J, Gidding SS. Nonnutritive sweeteners: current use and health perspectives. *Diabetes Care*. 2012;35:1798-1807.

Hamdy O and Horton ES. Protein content in diabetes nutrition plan. *Curr Diab Rep*. 2011;11:111-119.

Joslin Diabetes Center and Joslin Clinic. Clinical nutrition guideline for overweight and obese adults with type 2 diabetes, prediabetes or those at high risk for developing type 2 diabetes. 2007.

Prevention or delay of type 2 diabetes. *Diabetes Care*. 2016;39(Suppl. 1):S36–S38.

Sheard NF, Clark NG, Brand-Miller JC, et al. Dietary carbohydrate (amount and type) in the prevention and management of diabetes. *Diabetes Care*. 2004;27(9): 2266-2271.

Wheeler ML, Dunbar SA, Jaacks SM, et al. Macronutrients, food groups, and eating patterns in the management of diabetes. *Diabetes Care*. 2012;35: 434-445.

Class 12:

Gastroenterology and Probiotics

Instructors: Prelack, Kane, Mason

4/10/19

Learning Objectives for class 12: Upon completion of this class, students will be able to:

Gastroenterology (recorded):

- Define and differentiate maldigestion and malabsorption.
- Identify factors with cause maldigestion and malabsorption.
- Describe the efficacy and safety of using probiotics and prebiotics under specific clinical conditions.
- Describe the clinical manifestations and nutritional management of several gastroenterological disease states, such as pancreatitis and inflammatory bowel disease.

Probiotics (live):

- Describe the difference between prebiotics and probiotics
- Summarize the current literature about the efficacy of probiotics in various disease states.

Readings for class 12:

Kane and Prelack: Chapter 12 and 13

Diabetes Case Study Due**Gastroenterology Case Study Assigned****Class 13: Renal Disease**

Instructors: Prelack, Kane, Wiener, Poon

4/17/19

Learning Objectives for class 13: Upon completion of this class, students will be able to:

Renal (live):

- Describe the causes and management of acute kidney injury and chronic renal failure.
- Name the nutritional concerns and outline the nutritional requirements and dietary modifications associated in chronic renal disease.
- Describe the methods of renal replacement therapy and the nutritional requirements and dietary modifications associated with each in end stage renal disease.

Required Readings for class 13:

Kane and Prelack: Chapter 14

Gastroenterology Case Study Due**Class 14: Allergy**

Instructors: Prelack, Kane, Leung

4/24/19

Learning Objectives for class 14: Upon completion of this class, students will be able to:

Allergy (live) :

- 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.

Required Readings for class 14:

Du Toit G *et al.* Randomized Trial of Peanut Consumption in Infants at Risk for Peanut Allergy. *N Engl J Med.* 2015; 372:803-813.

Hays T. Special considerations for managing food allergies. *J Parenter Enteral Nutr.* 2012;36:56S-59S.

Valenta R, et al. Food allergies: the basics. *Gastroentero* 2015;148:1120–1131.

This schedule is subject to modifications at the discretion of the instructor.