



KINE 3400: Nutrition
Kinesiology

[3] Credit Hours
Fall 2017

August 28 – December 7, 2018

Meeting Schedule: Tuesdays and Thursdays, 12:30-1:45 pm Ruffner Hall G008

Exam 1: October 4, 2018

Exam 2: November 1, 2018

Final Exam: TBA, Ruffner G008

Please bring your laptop/other electronic device to actively participate in lectures!

Instructor

Dr. Sibylle Kranz

Assoc. Professor, RDN

Office: 117 Memorial Gymnasium

Office Hours: I'm usually in my lab or in my office, so email me for an appointment

Email: sibylle.kranz@virginia.edu

Teaching Assistants:

Doctoral student, Nicole Gilbertson (nmg4xk@virginia.edu), office hours TBA

Doctoral student, Natalie Kramer (nak5dy@virginia.edu), office hours TBA

Master's student, Rayghan Larick (rsl4xe@virginia.edu), office hours TBA

Description

Have you ever noticed that some people seem to be able to eat anything they want and are still slim, active and seem healthy? Do you every feel confused or overwhelmed by all the conflicting “nutrition” or eating advice that is described in the media and professional literature? Do you wonder about how food is processed in your body and how your food consumption affects your health? These are questions that are on the mind of many people in the US and trying to answer them using the information provided in the public media can be very confusing. To effectively address these questions, the basic sciences dealing with food intake, energy and nutrients uptake (digestion and absorption), and use of calories and nutrients (metabolism) need to be understood.

In this class, we will explore how food is absorbed and digested and how different nutrients are processed by your body. We will touch on how nutrition affects certain functions of your body and health. It is well established that sustained healthy nutrition is a lifestyle decision that can lower the risk for many diseases and improve quality of life: you will analyze your own diet and create a plan to improve your diet to prevent chronic diseases. Lastly, what you learn in this class about digestion, absorption, and metabolism of nutrients will empower you to evaluate popular diet advice. You will have the opportunity to practice that skill in small groups in form of a collaborative learning activity. Since food supply and food environment are significant

predictors of food intake, we will discuss how socio-economic factors, diversity, and other cultural differences affects people's food environment and consumption choices.

Instructional Methods:

Learning about human nutrition and the factors influencing food intake can be very confusing or overwhelming. To help you understand the material and apply it to your own diet and diet advice available in the public media, we will have lectures and interactive learning sessions. This combination of formats is designed to give you opportunities to learn about the class materials by ask questions, engage in learning activities such as mini group work, surveys, in-class groups discussions, and practice the processes involved in evaluating claims in a group with your peers. To apply your knowledge, you will have the opportunity to complete experimental activities, for instance when you self-assess your diet and create specific plans for yourself to improve your diet. To apply your new knowledge to a broader field, you will engage in a collaborative learning (group activity) to explore and evaluate examples of popular diet advice. We will use a number of learning software methods (sli.do, kahoot, CatMe) to help you interact with the teaching team in an effective manner. Please make sure to bring your cellphones and/or laptops to class every time.

How will this course help you in the future?

The objectives of this course are to empower you to understand how food is dealt with in your body and how your diet can influence your well-being and health. Once you understand what happens to the food you are eating and how it may help or harm your body, you can make good decisions for your own and other people's health.

This course is also designed to lay the groundwork on basic human nutrition to help you enjoy taking the other nutrition-related courses offered in the Department of Kinesiology:

KINE 3450 Exercise and Nutrition Medicine

KINE 4400 Nutrition and Athletic Performance

KINE 5485 Nutrition in the Life Cycle

KINE 6400 Changing Diet and PA Behavior

... and many other courses in various disciplines.

Course Text (suggested):

To help us be organized throughout the semester and to address important physiological and biochemical processes as well as discuss how cultural factor affect food intake, we will use the text book:

Grosvenor, MB, Smolin LA. Visualizing Nutrition: Everyday choices. Wiley Publishing. 3 rd Ed. December 2014. ISBN: 978-1-118-79667-2.

Goals

Students will explore basic diet and nutrition concepts and the role of nutrition in human health.

After taking this course, you will be able to ...

- (1) describe the digestion, absorption, and metabolism of macronutrients and select micronutrients (vitamins).
- (2) use knowledge on the physiological processes of the human body to evaluate the contribution that nutrition can have on your health.
- (3) explore the relationships between socio-economic factors and food intake.
- (4) critically evaluate your dietary intake and create a detailed plan to improve your diet quality.
- (5) apply critical thinking skills to analyze popular nutrition advice.
- (6) discover how diversity in socio-demographic characteristics affects food and nutrient intake and chronic disease risk in the US.

Learning Assessments

Dietary self-assessment (analysis + 300 words summary essay)

To help you assess dietary intake and critically evaluate your own diet quality, you will complete a personal diet assessment project. Since diet quality affects a number of non-communicable diseases, especially those that are known to be the leading causes for morbidity and mortality in the US population, population health could be improved with better dietary intake habits. The gap between dietary intake guidance and actual diet remains a major challenge in public health efforts, in part due to the fact that many individuals are not aware of what/when/how much they are eating. The goal of this project is to guide you through the process of evaluating your own diet and compare it to the dietary intake goals in order to identify areas and strategies to improve dietary intake habits. You will keep a record of everything you eat and drink for 3 days, enter the information in the web-based “MyFitnessPal” <https://www.myfitnesspal.com/> and analyze the results to create a plan for you to improve suboptimal components of your diet thereby reducing your disease risk. The goal for this project is for you to identify and plan how to make these improvements in a realistic manner. The project is explained in great detail on a Panopto video that will be shared with you.

Collaborative learning technique (group work): the diet works (thumbs up) or doesn't work (thumbs down)

Each team will meet outside of class. You can meet as often as you want/need to. In the first meeting, you should introduce yourselves and come to an agreement on which diets you will present to each other, in the subsequent meetings, each team member will introduce the diet s/he picked and discuss with the group the science supporting or refuting the diet until you reach a conclusion. Your argumentation should be scientific and based on human dietary intake behavior, physiology, and biochemistry. The goal of the exercise is for you come to a conclusion that all team members must agree to. You will then enter your team's vote (thumbs up or down) in the poll voting rubric for this assignment. At the end of the course we will review the decisions you have come to and evaluate the overall ranking of the diets that were evaluated for their scientific merit. As a second part to this project, we will discuss in class your group's findings and examine the effect of socio-economic factors on the likelihood to adapt the diets that were evaluated.

Exams and comprehensive final

To help you connect the physiologic and behavioral components of intake behavior, you will prepare for a total of three exams and several pop-up quizzes. All exams are predominantly based on the lecture and discussion materials; however, group and individual diet assignment materials will also be reflected. The two in-term exams cover approximately one-third each of the class, the final is cumulative. The exams are designed to give you an opportunity to demonstrate what you learned about diet behavior, nutrients, digestion, absorption, metabolism, and the diet-disease relationships in very basic terms. You will have the opportunity to demonstrate your understanding of the material in multiple-choice questions, short essays, fill-in the blank sentences, and labeling of visuals.

Grading

I trust every student in this course to fully comply with all of the provisions of the University's Honor Code. By enrolling in this course, you have agreed to abide by and uphold the Honor System of the University of Virginia.

Please seek my help and input to rectify any potential conflict between the assigned grade and the grade you expected within a week of the grade being posted. Below is the grading scheme of assignments and exams.

The due dates for the projects are indicated on the tentative course schedule. The assignments must be submitted by 5 pm. Late assignments will be accepted up to 2 days following the due date with instructor approval. If no arrangements have been made, any and all assignments submitted after 5 pm on the due date will automatically result in a 25% reduction from the assignment's total grade. An additional 10% will be deducted for each subsequent day the assignment is late.

You are expected to complete assignments/exams when scheduled, unless you pre-arranged an excused absence before the exam or assignment deadline. If you miss an exam or the assignment deadline, but have not made arrangements with me ahead of time, you will receive a zero grade for the missed assessment. The final must be taken at the official time and day. Pre-arranged make-up exams will be essay tests.

Diet self-assessment	100 pts (20%)
Group evaluation of diets	100 pts (20%)
Exam 1	100 pts (20%)
Exam 2	100 pts (20%)
Cumulative Final	<u>100 pts (20%)</u>
Total max. points	500 pts (100%)

Grades will be determined on the basis of the usual UVA undergraduate grading scale:

97-100% = A+	87-89 = B+	77-79 = C+	65-69 = D
93-96 = A	84-86 = B	74-76 = C	64-0 = F
90-92 = A -	80-83 = B-	70-73 = C-	

NOTE: THERE WILL BE NO ADDITIONAL EXTRA CREDIT GIVEN FOR THIS COURSE GRADE

Tentative Course Schedule (all changes to this schedule will be announced in class)

Date	Day	Topic	Book pages	Due
Week 1		Getting started		
8/28	T	Orientation to the class, group setup, online tool sign in		In-class pre-quiz
8/30	R	<i>Steps in the self-assessment project</i>		Watch Panopto lecture
Week 2		Healthy Nutrition Basic Concepts	2-57	
9/4	T	Definition of “healthy diets”		Entering food intake to tracker
9/6	R	<i>Set up and enter food intake for diet self-evaluation</i>		
Week 3		Absorption and Digestion	58-91	
9/11	T	Function and Mechanisms of Digestion and absorption 1		
9/13	R	Function and Mechanisms of Digestion and absorption 2		
Week 4		Nutrients: Carbohydrates	92-123	
9/18	T	Digestion and absorption of carbs		
9/20	R	Function and Role of carbs– the body’s power supply		
Week 5		Nutrients: Carbohydrates		
9/25	T	Diabetes and blood glucose regulation (Gilbertson/Kranz)		Diet project due
9/27	R	Introduction to group project: evaluating diets (TA/Kranz)		Meet with your group
Week 6		Wrap up part 1 of class		
10/2	T	<i>Recap session: digestion and absorption + carbs</i>		
10/4	R	Exam 1(digestion & absorption and carbs)		Exam 1
Week 7				
10/9	T	<i>Reading day/no class</i>		
10/11	R	<i>Meet with your group: consolidate evidence</i>		<i>Meet with your group</i>
Week 8		Nutrients: Fats	124-155	
10/16	T	Digestion and absorption of fats: fatty acids, cholesterol & co.		
10/18	R	Function and Role of fats		
Week 9				
10/23	T	<i>Meet with your group: create video to share results</i>		<i>Meet with your group</i>
10/25	R	Cardiovascular disease and dietary fats		
Week 10		Wrap up part 2 of class		
10/30	T	<i>Recap session: digestion, absorption and function of fats</i>		<i>Meet with your group/vote</i>
11/1	R	Exam 2 (digestion & absorption, role of fats)		Exam 2
Week 11		Nutrients: Proteins and amino acids	156-185	
11/6	T	Digestion and absorption of proteins		
11/8	R	Function and Role of amino acids – muscle/fat conversion		
Week 12		Energy balance and body weight	288-306	
11/13	T	<i>Recap session: digestion, absorption and function of amino acids</i>		Submit group video
11/15	R	Body weight components and regulation		
Week 13		Evaluation of popular weight loss diets		
11/20	T	Report group work: videos and voting on weight loss diets		
11/22	R	<i>Thanksgiving break</i>		
Week 14		Water, vitamins/minerals	186-328,	
11/27	T	Water homeostasis and vitamins/minerals	240-247	
11/29	R	Food safety, food production and the market		
Week 15		Course wrap-up	436-468	
12/4	T	Distribution of food in the US and the world, Hunger	474-486	
12/6	R	<i>Final Review</i>		
Week 16				
12/10+	?	FINAL		Final

Classes in italics are potentially out-of-class meetings

Policy on class attendance:

You are expected to attend class Tuesdays and Thursdays to maximize the opportunities to learn from your peers, the TA and me. If attendance is not possible, you are expected to make arrangements with your classmates to get the completed class notes. Neither the course instructor nor the TAs will provide individual instruction to replace missed classes.

Curry School of Education Policies:**University Email Policy**

Students are expected to activate and then check their official U.Va. email addresses on a frequent and consistent basis to remain informed of University communications, as certain communications may be time sensitive. Students who fail to check their email on a regular basis are responsible for any resulting consequences.

University of Virginia Honor System

All work should be pledged in the spirit of the Honor System of the University of Virginia. The instructor will indicate which assignments and activities are to be done individually and which permit collaboration. The following pledge should be written out at the end of all quizzes, examinations, individual assignments and papers: "I pledge that I have neither given nor received help on this examination (quiz, assignment, etc.)". The pledge must be signed by the student. For more information please visit <http://www.virginia.edu/honor/>.

Special Needs

It is the policy of the University of Virginia to accommodate students with disabilities in accordance with federal and state laws. Any student with a disability who needs accommodation (e.g., in arrangements for seating, extended time for examinations, or note-taking, etc.), should contact the Learning Needs and Evaluation Center (LNEC) and provide them with appropriate medical or psychological documentation of his/her condition. Once accommodations are approved, it is the student's responsibility to follow up with the instructor about logistics and implementation of accommodations.

If students have difficulty accessing any part of the course materials or activities for this class, they should contact the instructor immediately. Accommodations for test taking should be arranged at least 14 business days in advance of the date of the test(s). Students with disabilities are encouraged to contact the LNEC: 434-243-5180/Voice, 434-465-6579/Video Phone, 434-243-5188/Fax. For more information, visit the U.Va. Special Needs website at <http://www.virginia.edu/studenthealth/lnece.html>.

Safety and well-being

UVA is committed to providing a diverse, safe, and welcoming learning community and I am committed to creating a safe, equitable, and inclusive classroom environment. All members of the UVA community should be treated with respect and compassion and I encourage you to uphold these ideals. As a faculty member, know that I am here to support you and direct you towards resources that can help you cope with challenges in your academic and personal life.

If you feel overwhelmed, uncomfortable, or stressed out, please reach out to ask for guidance and support. The Student Health Center has Counseling and Psychological Services (CAPS) available to all students (434-243-5150 or 434-972-7004 after hours and on weekends). You can also call Madison House's HELP line to speak to someone anonymously any time (434-295-8255).

If you or someone you know is experiencing gender, sexual or domestic violence, you can find help through the Office of the Dean of Students, Sexual Assault Resource Agency (SARA), Shelter for Help in Emergency (SHE), or the UVA Women's Center. For more information, contact the Director of Sexual and Domestic Violence Services (434-982-2774).

Do not hesitate to use these resources of trained experts to help you.