

FNUT 3759 - Advanced Nutrition

Fall 2026 Syllabus, Section 01, CRN 40869,

Credit hours: 3

Instructor

Zara Rowlands

Professional Qualifications:

PhD, Dietetics and Nutrition, Florida International University, Miami, FL (2003)

MS, Nutritional Sciences, Howard University, Washington, DC (1995)

Dietetics Supervised Practice (1993-1995)

BS, Human Nutrition, Howard University, Washington, DC (1991)

Registered Dietitian Nutritionist (1995 – present)

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Course Description

3759. Advanced Nutrition. Integrated approach to nutrition and health, emphasizing metabolism and functions of nutrients at the cellular level; nutritional needs for optimal health; problems of over nutrition and under nutrition. Prereq.: FNUT 3735 or permission of instructor. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required			

Required Text: Gropper, Smith and Groff, Advanced Nutrition and Human Metabolism, latest edition

Current articles and media content links relevant to the course content will be posted to the Blackboard Course Site.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Review of Biochem & Physiology handout	Review of Human Physiology and Biochemistry	
Wed	8/26	Chapter 1 - The Eukaryotic Cell	Cell membrane & differentiation	
Mon	8/31	Chapter 1 - The Eukaryotic Cell	Cell organelles, functions and repair/replacement	
Wed	9/2	Chapter 2 - Digestion	The digestive tract and interaction with food	
Mon	9/7	Labor Day holiday		
Wed	9/9	Chapter 2 - Digestion	Nutrient extraction, absorption, transport	
Mon	9/14	Chapter 2 - Digestion	The gut biome and impact on nutrition status	
Wed	9/16	Chapter 2 - Digestion	Diseases that affect digestion and nutrient uptake. The accessory organs of digestion	
Mon	9/21	Chapter 4 - Carbohydrates	Digestible carbohydrates, digestion and absorption	
Wed	9/23	Chapter 5 - Fiber	Indigestible carbs, prebiotics and probiotics	
Mon	9/28	Chapter 6 - Lipids	Lipid types, sources, digestion, absorption	

Wed	9/30	Chapter 6 - Lipids	Lipid metabolism, diseases and therapeutic use of lipids
Mon	10/5	Chapter 7 - Proteins	Protein sources, digestion, absorption
Wed	10/7	Chapter 7 - Proteins	Amino acids, metabolism and inborn errors of metabolism
Mon	10/12	Chapter 8 - Integration of Metabolism	Carbs, Proteins & Lipids interrelationships as fuel sources & complexes
Wed	10/14	Exam 2	Exam in Class
Mon	10/19	Chapter 3 - Energy	Macronutrient use and storage
Wed	10/21	Chapter 3 - Energy	Homeostatic mechanism, hormone shifts and macronutrient usage
Mon	10/26	Chapter 9 - Vitamins - Water soluble	Sources, absorption, metabolic functions, homeostasis of water soluble vitamins
Wed	10/28	Chapter 10 - Fat Soluble Vitamins	Sources, functions, homeostasis and toxicity
Mon	11/2	Chapter 11 - Macro-Minerals	Sources, absorption, and physiological roles
Wed	11/4	Exam 3	Exam in Class
Mon	11/9	Chapter 12 - Micro and Trace Minerals	Micro & Trace minerals, roles in metabolism and homeostasis
Wed	11/11	Veteran's Day holiday	
Mon	11/16	Chapter 14 - Water & Electrolytes	Fluid homeostasis, electrolytes, acid-base balance
Wed	11/18	Metabolic Assignment due	Class presentations
Mon	11/23	Posted Readings - Intersection of Pharmacology & Nutrition	Posted Readings - Drug Metabolism and Drug/food/nutrient interactions
Wed	11/25	Thanksgiving Break	No Classes
Mon	11/30	Posted Readings - Supplements	Safety & Efficacy of Supplements
Wed	12/2	Posted Readings - Phyto- and Zoochemicals	Food components, not considered nutrients, with metabolic activity
Mon	12/7	Office Hours available for review	
Wed	12/9	Final Exam	Final Exam

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