PASSAIC COUNTY COMMUNITY COLLEGE

Passaic County Community College
Academic Year: 2024-2025
Standard Syllabus

Department Chair: Professor Joshua Sabatini
Program Coordinator: Professor Ann Deblinger

Course Code: SC-103

Course Title: Nutrition

Department: Biological and Physical Sciences

Semesters Offered: Fall, Winter, Spring, Summer

Course Description: This course introduces students to the biochemical basis of nutrient action. Topics include the structure, function and metabolism of the three primary nutrients—carbohydrates, lipids, and proteins, as well as the interaction of various enzymes, vitamins, and hormones on food metabolism. Physiology of nutrient deficiencies and study in methods of research in nutrition are also covered. Laboratory experiments include chemical analysis of major nutrients, measurement of kilocalories, metric units, and percentages of nutrients.

Prerequisites: *MA 022, MA025, MA025A, MA 025B or Test Placement*

Credits: 4 **Lecture Hours:** 3 **Lab Hours:** 3 **Clinical/Fieldwork Hours:** 0

REQUIRED TEXTBOOK/MATERIALS:
1. Lecture Text: Open Educational Resources that will be available and posted online for students
2. Lab Materials: Lab handouts and original Lab Activities

ADDITIONAL TIME REQUIREMENTS: Based on a 15 week semester, students are expected to spend a minimum of 8 hours outside of class doing homework each week.

COURSE LEARNING OUTCOMES: Upon successful completion of this course, students will be able to:
- describe the molecular structures and physiological functions of the six classes of nutrients.
- apply the scientific method in research and lab to analyze scientific problems.
- conduct dietary analyses using USDA Nutrient Analysis software and current published material
- prepare interpretive reports based on scientific data
- distinguish between nutritional information obtained from valid scientific sources and that obtained from popular promotional sources
- perform measurement and tests using recipes, formulas and established norms for laboratory exercises.
- prepare and report scientific observations in standard format from accurate measurements and interpretation of environmental data.

GENERAL EDUCATION OUTCOMES: Upon successful completion of this course, students will be able to:
3.1 Use critical thinking skills appropriate for the nature and level of a given Gen Ed course to solve problems involving, but not limited to, data analysis and interpretation, and experimental design.

3.2 Demonstrate understanding of basic terminology, major concepts and fundamental theories in Nutrition.

GRADING STANDARD:

Exam I	10%	Lab Participation
Exam II	10%	Lab Journal
Exam III	10%	Lab Final
Exam IV	10%	
Final Exam	20%	
Research	15%	

COURSE CONTENT: (Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resource)

Lecture topics will include, but are not limited to the topics outlined below. Selected sections within specific chapters will be assigned and select chapters will be covered in depth while others will be given a general overview.

	Lecture Topic(s)	Chapter	Comments
1	Introduction and overview	1	Define nutrition, kilocalorie, energy content of food, nutrient functions and percentages of nutrients in food composition
2	**What You Eat and Why**	1	What You Eat and Why: six classes of nutrients, metric system, hypothalamus, hormones that drive hunger and satiation
3-4	**Guidelines for Designing a Healthy Diet**	2	Guidelines for Designing a Healthy Diet -ABCDE's of assessment, My Pyramid.Gov, concept of nutrient density, phytochemicals
5-6	**The Human Body: The Physiology of Digestion**	3	Cell structure, organs and systems that participate in digestion. Absorptive mechanisms, hormones enzymes, genetics, nature vs. nurture
7-8	**Carbohydrates**	4	Identify basic structure: mono/disaccharides and polysaccharides, fiber, concept of protein sparing, Glycemic Index of Carbohydrate Foods
9-10	**Lipids**	5	Types of fat- essential functions of fatty acids, phospholipids, cholesterol, triglycerides, differentiate between saturated, mono/polyunsaturated fats, lipoproteins and digestion and absorption, role of fats in heart disease
10-11	**Protein**	6	Protein: amino acids, synthesis, denaturation, digestion and absorption, physiological functions, protein requirements
12	**Energy Balance and Weight Control**	7	Energy Balance: thermogenesis, TEF, basal metabolism, physical activity, BMI, role of genetics in obesity
13	**Vitamins, Water & Minerals**	8, 9	Vitamins: Water soluble, fat soluble, major functions and symptoms of deficiencies, evaluate the use of supplementation vs. plant foods Water and Minerals: functions of water, functions and absorption of major and trace minerals
14	**Safety of Our Food Supply Solutions**	13	Safety of Food and Water: food borne bacteria and viruses, chemical additives, environmental contaminants

	Review	16	Semester work
	Final Comprehensive Exam		

Laboratory sessions will be selected form the following list, but are not limited to the items present. The textbook provides background information as well as guidelines for many of the listed activities. Lab handouts will be provided.

Lab	Topics	Written Exercises	Activities	Gen Education Skills and/or Comments
1	Lab Safety Measurement: Metric units	Handouts Selected labs	Various Lab handouts	Lab equipment procedures Conversions, equations, convert a recipe in a handout
2	Scientific Method; Exercises on Hypothesis	Lab Handout	Journal Chart/table/graphs	Observations Recording Collecting Data/ Tabulating data individually and collectively
3	Dietary Intake Chart	Questionnaire	Experience/with recording/behavior	Observation of details Recording/ Tabulating data individually and collectively
4	ABCDE of nutritional assessment. Anthropometric measures	BMI, Metropolitan Weight Charts, Skinfold charts	Measurements Recording Quantifying	Various Measurements and Units Use of tables and norms Predictions
5	Biochemical/Clinical Assessment	Sample CBC health assessment/ signs and symptoms Handout	Reading the CBC and evaluating nutritional health	Predictions Observations Comparison of samples to norms
6	Diagram and Label of the cell Microscopy Lesson	Diagram Draw cells of the digestive system	Microscope skills	Labeling, observation technical lab skill working with slides and microscopes
7	Anatomy and Physiology of Digestion	Label handouts /models	Labeling Charts, use of models Microscopy slides from digestive organ cells	Observation Using a microscope Labeling and identifying function
8	Family Tree Digestive Health	Chart to be filled in Textbook/handout	Research and internet search/Group Reports	Working in groups Analysis of data
9	Dissection of Fetal Pig Digestive organs	Handout Lab sheet	Dissection Observation Identification	Working in a team Dissection skills

10	Carbohydrate Mapping Fiber Recommendation Chart	Calculations	Recording, Calculations analysis	Concept Mapping Analysis of Data
11	Nutrient Analysis	Test Kit(s)	Lab skills- using reagents/equipment	Testing “known” samples and “unknown” samples Using test kits Following testing procedures Working in groups
12	Properties of Lipids	Test Kit Handout(s)	Lab skills- testing	Testing “known” samples and “unknown” samples Using test kits Following testing procedures Working in groups
13	Protein Denaturation	Lab and Experiment	Lab skills heating/measuring observations	Following testing procedures, Working in groups Observation and analysis
14	Metabolism Lab Weight Management Contract	Lab Handout	Calculations Charts Analysis	Observation Collecting Data Analysis
15	Food Safety Lab Bacteria in common household foods	Article Handout	Lab equipment- agar plates/culture microscope	Testing procedure Observation
16	Lab Final Exam	Journal and Handouts		Written question or problem from each week.

COLLEGE POLICIES: For Information regarding:

- PCCC’s Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

Inclement Weather:
In the event of inclement weather and the College is closed, all classes will switch to remote (Zoom) learning. The Zoom link for this course section is has been added here in this document by your instructor. Please also see BlackBoard for further instructions.

Panther Alert: The college will announce delayed openings, closings and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student Accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Requesting Reasonable Accommodations at Passaic County Community College: Passaic County Community College Office of Accessibility Services, in accordance with Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008 is committed to providing reasonable accommodations to students with documented disabilities. If you have a disability and believe you need accommodations, please contact the Office of

Accessibility Services (OAS) at (973) 684-6395 or email ods@pccc.edu. Students should request accommodations as early as possible, since they may take time to implement.