



蘇州大學
Soochow University

HLT 350 Nutrition and Metabolism

Summer 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

This course is designed to provide students with a comprehensive understanding of human nutrition and metabolism. It will cover the biochemical basis of nutrition, focusing on the metabolic processes involved in health and disease. The course will explore the role of various nutrients such as proteins, carbohydrates, lipids, vitamins, minerals, and their importance in maintaining overall health. Additionally, the course will delve into the pathogenesis of metabolic diseases and their impact on human health.

Upon Completion of this Course, students will be able to:

1. Understand the basic principles of human nutrition and metabolism;
2. Learn about the biochemical processes involved in nutrient digestion, absorption, and utilization;
3. Gain knowledge of the nutritional requirements for optimal health;
4. Explore the relationship between diet, metabolism, and disease;
5. Analyze the molecular mechanisms underlying metabolic disorders;
6. Evaluate the impact of lifestyle choices on metabolic health;
7. Develop critical thinking skills to apply knowledge of nutrition and metabolism to clinical practice.

PREREQUISITES

CHM 340 General Biochemistry



GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
4 Assignments	20 Points
2 Quizzes	20 Points
Midterm Exam	25 Points
Final Exam	35 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Lori A. Smolin, Mary B. Grosvenor, Debbie Gurfinkel, *Nutrition: Science and Applications* (3rd ed), 2020, John Wiley & Sons Inc.

Recommended (Optional) Texts or Other Materials:

None.

COURSE TOPICS

MODULE	TASKS
Module 1	<p>Topics:</p> <p>Topic 1: Introduction to Human Nutrition & Metabolism</p> <p>Topic 2: Biochemistry of Nutrients</p> <p>Topic 3: Digestion and Absorption of Nutrients</p> <p>Topic 4: Energy Metabolism and Glucose Homeostasis</p> <p>Assessments:</p> <p>Assignment #1</p>



Module 2	<p>Topics: Topic 5: Role of SGLT Transporters in Glucose Uptake Topic 6: Glucose Uptake by Cells and Role of GLUT Transporters Topic 7: Pharmacological Interventions Targeting Glucose Metabolism in Chronic Diseases Topic 8: Importance of Pyruvate in Linking Glycolysis to the Krebs Cycle and Electron Transport Chain</p> <p>Assessments: Quiz #1</p>
Module 3	<p>Topics: Topic 9: Lipid Metabolism and Cholesterol Regulation Topic 10: Protein and Amino Acid Metabolism Topic 11: Nucleic Acid Metabolism and Genetic Implications Topic 12: Mineral and Trace Element Metabolism</p> <p>Assessments: Assignment #2 Midterm Exam</p>
Module 4	<p>Topics: Topic 13: Vitamin Metabolism and Its Role in Health Topic 14: Endocrine Regulation of Metabolism: Insulin and Glucagon Topic 15: Carbohydrate Metabolism Disorders: Diabetes Mellitus Topic 16: Lipid Disorders: Hyperlipidemia and Atherosclerosis</p> <p>Assessments: Quiz #2</p>
Module 5	<p>Topics: Topic 17: Protein-Energy Malnutrition and Its Consequences Topic 18: Micronutrient Deficiency Diseases Topic 19: Obesity and Its Metabolic Complications Topic 20: Metabolic Syndrome and Cardiovascular Risk</p> <p>Assessments: Assignment #3</p>
Module 6	<p>Topics: Topic 21: Nutritional Intervention in Chronic Diseases Topic 22: Role of Dietary Fiber in Health and Disease Topic 23: Effects of Aging on Metabolism and Nutritional Needs Topic 24: Metabolic Adaptations to Stress</p> <p>Assessments: Assignment #4</p>



Module 7	Topics: Topic 25: Metabolic Adaptations to Stress Topic 26: Genetic Basis of Hereditary Anemias (e.g., Thalassemias, Sickle Cell Anemia) Topic 27: Nutrition and Immune Function Topic 28: Clinical Applications Assessments: Final Exam
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ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.



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TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.