

# 01\_Introduction to Scientific Principles

Content Area: **Science**  
Course(s):  
Time Period: **Full Year**  
Length: **15 Block**  
Status: **Published**

## **General Overview, Course Description or Course Philosophy**

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- The course tests the students' understanding of the relationships between diet, lifestyle, and the prevention of disease. The student is expected to understand digestion, absorption, and metabolism of protein, carbohydrates, fat, vitamins, and minerals. Additionally, evaluating nutrition claims and food labels are expected student learning outcomes. This is a Rutgers University Course and students receive 3 college credits for passing the end of semester examination provided by the university. There is an examination fee associated with this course for college credit. All information discussed in the course description is the basis of the examination at the end of the semester.

## **OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS**

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- Recall a basic understanding of healthy food options
- Identify the classifications of nutrients
- Recall how scientists use various research to acquire nutritional information
- Identify misinformation--On the Net and in the News
- Identify the major classes of nutrients, energy-yielding nutrients, conducting and publishing research, dietary reference intakes, establishing nutrient recommendations, components of nutrition assessment

## **CONTENT AREA STANDARDS**

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SCI.9-12.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
SCI.9-12.HS-LS1-6	Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
SCI.9-12.HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

## **RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)**

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VHEL.9-12.9.4.12.H.(5).2	Apply biochemistry, cell biology, genetics, mathematics, microbiology, molecular biology, organic chemistry, and statistics concepts to conduct effective biotechnology research and development.
VHEL.9-12.9.4.12.H.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.3	Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.4	Demonstrate knowledge of human structure and function as well as diseases and disorders to pursue the full range of postsecondary education and career opportunities in this cluster.

## **STUDENT LEARNING TARGETS**

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### **Declarative Knowledge**

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Students will understand that:

- There are major classes of nutrients, energy-yielding nutrients, conducting and publishing research, dietary reference intakes, establishing nutrient recommendations, components of nutrition assessment
- There are healthy food choices
- There is misinformation on nutrition and how to distinguish true from false information
- We have ways to measure food using the metric system
- There are risk factors associated with poor diet & nutrition

### **Procedural Knowledge**

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Students will be able to:

- Identify the major classes of nutrients
- Create simulated meal plans that consist of healthy options
- Identify false information regarding nutritional value
- Define the various categories of dietary reference intake (DRI)
- Explain the four assessments used to detect the energy, nutrient deficiencies, and excesses
- Identify risk factors for chronic disease

## **EVIDENCE OF LEARNING**

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## **Formative Assessments**

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### Assignments:

- Read Chapter(s) and complete chapter checkpoint questions
- Define Key Terms
- Study Guide
- Chapter Wrap Up Questions
- Complete Review Questions
- Optional Activities:
- Case Studies
- Article reviews

## **Summative Assessments**

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- - Benchmarks – departmental benchmark given at the end of MP1, MP2, and MP3
  - Alternative Assessments
    - Lab inquiries and investigations
    - Lab Practicals
    - Exploratory activities based on phenomenon
    - Gallery walks of student work
    - Creative Extension Projects
    - Build a model of a proposed solution
    - Let students design their own flashcards to test each other
    - Keynote presentations made by students on a topic
    - Portfolio

## **RESOURCES (Instructional, Supplemental, Intervention Materials)**

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- Whitney, E., Rolfes, S. Understanding Nutrition, 13 th edition. Belmont: Wadsworth Publishing Co.

2013.

- PubMed

### **INTERDISCIPLINARY CONNECTIONS**

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- Group and partner activities are assigned when possible
- Students will be grouped based on learning styles and approach to processing content

### **ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS**

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See link to Accommodations & Modifications document in course folder.