

# HED R114: INTRODUCTION TO NUTRITION SCIENCE

---

**Originator**

dfrehlich

**College**

Oxnard College

**Discipline (CB01A)**

HED - Health Education

**Course Number (CB01B)**

R114

**Course Title (CB02)**

Introduction to Nutrition Science

**Banner/Short Title**

Intro to Nutrition Science

**Credit Type**

Credit

**Start Term**

Fall 2021

**Catalog Course Description**

This course examines scientific concepts of nutrition related to the function of nutrients within the human body, nutrient requirements throughout the life cycle, and individual nutritional needs. Students will learn how to analyze and evaluate nutritional information and apply this information and dietary guidelines to their personal food choices. In addition, the course will explore current issues in nutrition including food safety, environmental contaminants, food technology, and food additives. C-ID: NUTR 110.

**Taxonomy of Programs (TOP) Code (CB03)**

0837.00 - Health Education

**Course Credit Status (CB04)**

D (Credit - Degree Applicable)

**Course Transfer Status (CB05) (select one only)**

A (Transferable to both UC and CSU)

**Course Basic Skills Status (CB08)**

N - The Course is Not a Basic Skills Course

**SAM Priority Code (CB09)**

E - Non-Occupational

**Course Cooperative Work Experience Education Status (CB10)**

N - Is Not Part of a Cooperative Work Experience Education Program

**Course Classification Status (CB11)**

Y - Credit Course

**Educational Assistance Class Instruction (Approved Special Class) (CB13)**

N - The Course is Not an Approved Special Class

**Course Prior to Transfer Level (CB21)**

Y - Not Applicable

**Course Noncredit Category (CB22)**

Y - Credit Course

**Funding Agency Category (CB23)**

Y - Not Applicable (Funding Not Used)

**Course Program Status (CB24)**

1 - Program Applicable

**General Education Status (CB25)**

Y - Not Applicable

**Support Course Status (CB26)**

N - Course is not a support course

**Field trips**

May be required

**Grading method**

Letter Graded

**Does this course require an instructional materials fee?**

No

**Repeatable for Credit**

No

**Is this course part of a family?**

No

**Units and Hours**

**Carnegie Unit Override**

No

**In-Class**

**Lecture**

**Minimum Contact/In-Class Lecture Hours**

52.5

**Maximum Contact/In-Class Lecture Hours**

52.5

**Activity**

**Laboratory**

**Total in-Class**

**Total in-Class**

**Total Minimum Contact/In-Class Hours**

52.5

**Total Maximum Contact/In-Class Hours**

52.5

**Outside-of-Class**

**Internship/Cooperative Work Experience**

**Paid**

**Unpaid**

## **Total Outside-of-Class**

**Total Outside-of-Class**

**Minimum Outside-of-Class Hours**

105

**Maximum Outside-of-Class Hours**

105

## **Total Student Learning**

**Total Student Learning**

**Total Minimum Student Learning Hours**

157.5

**Total Maximum Student Learning Hours**

157.5

**Minimum Units (CB07)**

3

**Maximum Units (CB06)**

3

### **Advisories on Recommended Preparation**

ENGL R097 or ENGL R100 or eligibility for ENGL R101

## **Entrance Skills**

### **Entrance Skills**

Write an essay with a college-level grammar.

### **Prerequisite Course Objectives**

ENGL R097-Write short essays of at least five paragraphs with effective introductory paragraphs; well-organized, coherent, and detailed support of thesis; and effective conclusions

ENGL R097-Write essays with acceptable college-level grammar, syntax, spelling, and idiomatic usage

ENGL R097-Analyze essay exam questions and organize and write effective responses

ENGL R097-Demonstrate familiarity with the principles of research and documentation

ENGL R097-Write a short paper incorporating documentation

ENGL R100-Develop a thesis.

ENGL R100-Write short (500-word) essays with effective introductory paragraphs; well-organized, coherent, and detailed support of thesis; and effective conclusions.

ENGL R100-Revise content and rewrite for fluent expression.

ENGL R100-Write essays with acceptable college-level grammar, syntax, spelling, and idiomatic usage.

ENGL R100-Analyze essay exam questions and organize and write effective responses.

ENGL R100-Read college-level materials and recognize the main idea.

ENGL R100-Summarize and paraphrase.

## **Requisite Justification**

### **Requisite Type**

Advisory

### **Requisite**

ENGL R097

### **Requisite Description**

Course not in a sequence

**Level of Scrutiny/Justification**

Content review

**Requisite Type**

Advisory

**Requisite**

ENGL R100

**Requisite Description**

Course not in a sequence

**Level of Scrutiny/Justification**

Content review

**Student Learning Outcomes (CSLOs)****Upon satisfactory completion of the course, students will be able to:**

- |   |  |
|---|--|
| 1 | Students will be able to complete their personal food choice and compare to current dietary recommendations.       |
| 2 | Students will identify the major structures involved in digestion and outline their role in the digestive process. |

**Course Objectives****Upon satisfactory completion of the course, students will be able to:**

- |    |  |
|----|--|
| 1  | Explain the functions and sources of nutrients - carbohydrates (starch, sugar, fiber), proteins (amino acids), fats (triglycerides, sterols, phospholipids), water, vitamins and minerals in the body.                           |
| 2  | Describe the main structures, functions, and physiology of the organs involved in nutrient digestion, absorption, and metabolism.  |
| 3  | Explain the secretions involved in digestion of carbohydrates, proteins, fats, vitamins, and minerals (enzymes, co-enzymes, bile, gastric acid, bicarbonate) and how they are regulated and define anabolism and catabolism.     |
| 4  | Describe the metabolism of nutrients through the blood and lymph systems- detail the utilization of carbohydrates, proteins, fat, vitamins and minerals.   |
| 5  | Evaluate nutrition needs during the life cycle: pregnancy, lactation, early childhood, teen, and older adult.  |
| 6  | Apply dietary guidelines and current nutrition recommendations to personal food choices - MyPlate food guide, Recommended Dietary Allowances [RDA], and Dietary Guidelines for Americans.  |
| 7  | Scientifically analyze and evaluate nutrition information to disease prevention and management - hypertension, cardiovascular disease, cancer, diabetes, and eating disorders.   |
| 8  | Compare and contrast vitamin and mineral deficiency and toxicity levels.   |
| 9  | Explain the role of feasting and fasting on glucose, proteins, lipids, and carbohydrates; describe the role of ketosis during fasting/starvation; define metabolic rate.   |
| 10 | Relate nutrition to health and fitness - describe the increased nutrient needs for athletes, the special concerns for female athletes, and the dangers of ergogenic aids or supplements, - discuss the psychology of wellness.   |
| 11 | Discuss the biochemistry of the muscle cell's use of glycogen, amino acids and fatty acids for energy, the regulation of electrolytes, and adaptations to increased need of certain vitamins and minerals for physical activity. |
| 12 | Discuss consumer concerns and regulations - food safety, environmental contaminants, food technology, food additives.  |
| 13 | Utilize a computer database to evaluate a personal diet record - three-day food journal is analyzed using a computer software program.   |

**Course Content****Lecture/Course Content**

1. Scientifically Analyze and Evaluate Nutrition Information:
  - a. Diets and Disease Prevention
  - b. (Medical Nutrition Therapy)
  - c. Role of "Functional Foods"

- d. Diets and Disease Prevention
- e. (Hypertension, Cancer, Diabetes),
- f. Eating Disorders
- 2. Nutrition Standards:
  - a. U.S. Department of Agriculture My Plate
  - b. Food Guides of Other Countries
  - c. Recommended Dietary Allowances
  - d. Dietary Guidelines for Americans
  - e. Food Journal Computer Databases
- 3. Vitamin and Mineral Deficiency and Toxicity
- 4. Relate Nutrition to Health and Fitness:
  - a. Nutrition for the Athlete
  - b. Biochemistry of the Muscle Cell
  - c. Ergogenic Aids and Supplements
  - d. Psychology of Wellness
- 5. Food Diversity and Consumer Concerns:
  - a. World Hunger and Global Environment
  - b. Food Safety and Regulations
  - c. Food Toxins, Residues, and Contaminants
  - d. Food Technology
- 6. Mechanical and Chemical Aspects of Digestion:
  - a. Digestive Tract
  - b. Digestive Secretions
  - c. Transport of Nutrients through Circulatory and Lymphatic Systems
  - d. Elimination
- 7. Metabolism:
  - a. Chemical Reactions
  - b. Anabolism and Catabolism
  - c. Enzymes and Coenzymes
  - d. Liver Functions
  - e. Carbohydrates (glucose),
  - f. Proteins (amino acids),
  - g. Lipids (glycerol and fatty acids),
  - h. Water, Vitamins, and Minerals
- 8. Nutrition Throughout the Life Cycle:
  - a. Pregnancy
  - b. Lactation
  - c. Early Childhood
  - d. Teen
  - e. Older adult

### Laboratory or Activity Content

None.

### Methods of Evaluation

**Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):**

Problem solving exercises  
Written expression

**Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):**

Essays  
Group projects  
Individual projects  
Journals  
Objective exams  
Problem-Solving Assignments  
Reports/papers

## Instructional Methodology

### Specify the methods of instruction that may be employed in this course

Audio-visual presentations  
 Collaborative group work  
 Class activities  
 Class discussions  
 Case studies  
 Distance Education  
 Group discussions  
 Guest speakers  
 Instructor-guided interpretation and analysis  
 Internet research  
 Lecture

### Describe specific examples of the methods the instructor will use:

1. Lecture on digestive system and processes with relevant audio visual presentation materials.
2. Lead in hands-on experiments, such as comparing the effect of digestive enzymes found in saliva in a simple carbohydrate vs. a protein.
3. Facilitate group activities, such as analyzing nutrition labels.
4. Assign small group projects, such as analyzing nutritional needs of specific populations.

## Representative Course Assignments

### Writing Assignments

1. Formulate personal health goals after completing one session with on-campus peer nutrition counselor; may include blood lab results and diet analysis

### Critical Thinking Assignments

1. Nutritional Label Analysis: Students will analyze food label nutrition facts.
2. Individual Papers
  - a. Nutritional Analysis: Students will complete a three-day nutrient analysis using computer software, mobile phone application, or textbook appendix on "Table of Food Composition."
  - b. Article Review: Students will critique a peer-reviewed medical journal article from the Library's online resources.
3. Team Projects Nutritional Plan: Students work as a team to design a 3-day diet plan that meets macro and micro nutrient goals. The team will test the plan and analyze the results.

### Reading Assignments

1. Peer-reviewed research articles
2. Handouts on nutrition, digestion, and metabolism.
3. Calculation of personal energy and macronutrient needs.

## Outside Assignments

### Representative Outside Assignments

1. Formulate personal health goals after completing one session with on-campus peer nutrition counselor; may include blood lab results and diet analysis

## Articulation

### C-ID Descriptor Number

NUTR 110

### Status

Approved

**District General Education****A. Natural Sciences****B. Social and Behavioral Sciences****C. Humanities****D. Language and Rationality****E. Health and Physical Education/Kinesiology****E1. Health Education**

Approved

**F. Ethnic Studies/Gender Studies****CSU GE-Breadth****Area A: English Language Communication and Critical Thinking****Area B: Scientific Inquiry and Quantitative Reasoning****Area C: Arts and Humanities****Area D: Social Sciences****Area E: Lifelong Learning and Self-Development****E Lifelong Learning and Self-Development**

Approved

**CSU Graduation Requirement in U.S. History, Constitution and American Ideals:****IGETC****Area 1: English Communication****Area 2A: Mathematical Concepts & Quantitative Reasoning****Area 3: Arts and Humanities****Area 4: Social and Behavioral Sciences****Area 5: Physical and Biological Sciences****Area 6: Languages Other than English (LOTE)****Textbooks and Lab Manuals****Resource Type**

Textbook

**Description**Smith, A. & Collene, A. (2018). *Wardlaw's Contemporary Nutrition* (11th edition). McGraw-Hill, New York.

## Distance Education Addendum

### Definitions

#### Distance Education Modalities

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

### Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

### Regular Effective/Substantive Contact

#### Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Other DE (e.g., recorded lectures)	A variety of ADA compliant tools and media integrated within the learning management system to help students reach competency. Tools may include: recorded lectures, narrated slides, screencasts, online library resources, 3rd party (publisher-created) tools, websites and blogs, multimedia and streaming platforms like YouTube, Films on Demand, 3CMedia, Khan Academy, etc.
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards will encourage various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course content. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
E-mail	E-mail, class announcements and various learning management system tools such as "Message Students Who" and "Assignment Comments", will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and district-provided email accounts.



**Hybrid (51%–99% online) Modality:**

<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
E-mail	E-mail, class announcements and various learning management system tools such as “Message Students Who” and “Assignment Comments”, will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and district-provided email accounts.
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards will encourage various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course content. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
Synchronous Dialog (e.g., online chat)	A set time each week may be provided when the instructor is available for synchronous chat to answer questions.
Other DE (e.g., recorded lectures)	A variety of ADA compliant tools and media integrated within the learning management system to help students reach competency. Tools may include: recorded lectures, narrated slides, screencasts, online library resources, 3rd party (publisher-created) tools, websites and blogs, multimedia and streaming platforms like YouTube, Films on Demand, 3CMedia, Khan Academy, etc.

**100% online Modality:**

<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
Asynchronous Dialog (e.g., discussion board)	Regular use of asynchronous discussion boards will encourage various types of interaction and critical thinking skills among all course participants. Questions and topics posed will allow students to discuss, compare and contrast, identify, and analyze elements of the course content. Other discussion boards may be used for Q&A and general class discussion by students and instructor to facilitate student success and strengthen student learning outcomes.
E-mail	E-mail, class announcements and various learning management system tools such as “Message Students Who” and “Assignment Comments”, will be used to regularly communicate with all students on matters such as clarification of class content, reminders of upcoming assignments and/or course responsibilities, to provide prompt feedback to students on coursework to facilitate student learning outcomes, or to increase the role of an individual educator in the academic lives of a student. Students will be given multiple ways to email instructor through both the learning management system inbox and district-provided email accounts.
Synchronous Dialog (e.g., online chat)	A set time each week may be provided when the instructor is available for synchronous chat to answer questions.
Other DE (e.g., recorded lectures)	A variety of ADA compliant tools and media integrated within the learning management system to help students reach competency. Tools may include: recorded lectures, narrated slides, screencasts, online library resources, 3rd party (publisher-created) tools, websites and blogs, multimedia and streaming platforms like YouTube, Films on Demand, 3CMedia, Khan Academy, etc.
Video Conferencing	Video tools such as ConferZoom may be used to provide live synchronous or asynchronous sessions with students. ADA compliance will be upheld with Closed Captioning during the session or of the recorded session. Student-to-student group meetings will also be encouraged.

Face to Face (by student request; cannot be required)

The instructor may hold regularly scheduled office hours either in person or via-web conferencing, for students to be able to meet and discuss course materials or individual progress. Students can request additional in-person or web conferencing meetings with faculty member as needed. Faculty may encourage online students to form “study groups” in person or online.

## Examinations

### Hybrid (1%–50% online) Modality

Online

### Hybrid (51%–99% online) Modality

Online

## Primary Minimum Qualification

HEALTH

## Additional Minimum Qualifications

### Minimum Qualifications

Nutritional Science/Dietetics

## Review and Approval Dates

### Department Chair

09/01/2020

### Dean

09/01/2020

### Technical Review

10/14/2020

### Curriculum Committee

10/14/2020

### Curriculum Committee

12/09/2020

### CCCCO

MM/DD/YYYY

### Control Number

CCC000579735

### DOE/accreditation approval date

MM/DD/YYYY