



RSCI300 – Science of Nutrition

Master Course Syllabus

Course Overview (QM Standards 1.2)

Course description: RSCI300 introduces the student to the fundamentals of nutrition. The course stresses a scientific foundation for nutrition that allows students to develop a personal diet and dietary practices that are associated with good health. Emphasis is placed on nutritional literacy with regard to the distinguishing information based on science from information based on unsubstantiated claims. The chemistry and metabolism of nutrients in health and disease will be covered.

Course Goals:

1. Identify the major classes of nutrients.
2. Distinguish between credible and unsubstantiated information.
3. Search, find, and successfully utilize credible online scientific research efficiently.
4. Name specific nutrients, identify where they can be found, and explain the consequences of their over and under consumption including the pathogenesis of obesity, diabetes, cardiovascular disease, and cancer.
5. Identify and characterize sugar substitutes.
6. Explain the details of the nutrition facts label and its implications for health.
7. Describe the basic anatomy and physiology of the digestive system.
8. Synthesize an argument regarding a controversial nutrition topic and support the argument with scientific evidence.
9. Describe the nutritional needs of varying populations.
10. Identify and distinguish important characteristics of common diseases associated with nutrition.
11. Identify important characteristics of diets and nutritional supplementation.

Pre-Requisites (QM Standard 1.6)

There are no course prerequisites for this course other than being an BOG (Board of Governors) student.

Minimum Technical Requirements and Online Resources (QM Standards 1.5 & 1.7)

In addition to a web browser (preferable Firefox) that is Blackboard compatible, you will need the other WVROCKS supported technologies outlined in the student policies section.

Online Resources: This course makes use of many online resources. I have made every effort to make sure the links I have are up-to-date. However, due to the changing nature of the web, you may find that a resource is temporarily unavailable or has been removed. If this should happen, please send me an email and I will find an alternative resource or modify the assignment accordingly.

Instructor Information (QM Standards 1.8 & 5.3)

Individual instructors complete this information.

Virtual Office Hours

I am available in my virtual office by appointment only. Send me an email to set up an appointment.

Personal Commitment

My personal commitments to you as a participant include:

- I will reply to course mail messages within 24 hours;
- I will read all discussion postings and will reply where appropriate within 3 days
- I will acknowledge my receipt of every course mail message immediately upon reading it. If I am unable to respond to the request or concern at the time of initial reply, I will give you an estimated time for my next reply.
- If I am going to be away from the course space for more than a day or two, I will send a message to you indicating the length of my absence.
- I will regularly update information regarding due dates in the course announcements.

Optional/Required Course Materials (QM Standard 4.6)

You will find your required textbook information in the course catalog at <http://ilearn-wvrocks.wvnet.edu>. All other materials are found in the individual course modules.

Grading Policy (QM Standard 3.2)

Evaluation and Grading

Each module consists of a series of assignments, worksheets, discussions and reviews, each having specific point values designated in the table below. For each assignment you will be given the rubric or grading criteria from which you will be evaluated.

The grading scale is as follows:

- A = 320-355 pts.
- B = 284-319 pts.
- C = 249-283 pts.
- D = 213-228 pts.
- F = < 213 pts.

List of Course Assignments with Point Values

Assignment/Assessment	Point Value
Orientation Assignment	5
Orientation Discussion	5
Learner Responsibilities Quiz	0
M1A1: Design a Nutrition Research Study	15
M2A1: Fast Food Assignment	20
Exam 1 (covers materials from Module 1 and Module 2)	50
M3A1: Vitamins and Minerals Assignment	10
Exam 2: (covers materials from Module 3 and Module 4)	50
M5A1: Before and After Grocery List Assignment	25
Exam 3: (covers materials from Module 5)	50
M6A1: Nutritional Controversy Research Paper	25
Exam 4: (covers materials from Module 6 and Module 7)	50
Exam 5: (covers materials from Module 8)	50
Total Points	355

Module Objectives and Assessments (QM Standard 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 5.1)

Module 1: Introduction to Nutrition

After you have completed the readings and content for this module you will be able to:

- Identify the six major classes of nutrients. [Exam 1]
- Identify the sources of carbohydrates. [Exam 1]
- Distinguish between macro and micro nutrients. [Exam 1]
- Distinguish between nutrient rich and empty calorie foods. [Exam 1]
- Identify phytochemicals and zoochemicals. [Exam 1]
- Distinguish between credible and unsubstantiated information. [Exam 1]
- Identify the steps of the scientific method. [Exam 1]
- Distinguish between a hypothesis and a theory. [Exam 1]
- Distinguish between qualifiable and quantifiable data [Exam 1]
- Identify the variables and controls in nutrition sources of entities conducting research. [Exam 1]
- Identify the credibility of various sources of entities conducting research. [Exam 1]
- Design a nutrition research study. [M1A1: Design a Nutrition Research Study Assignment]

Module 2: Fundamentals of Nutrition

After you have completed the readings and content for this module you will be able to:

- Identify the various types of carbohydrates. [M2A1: Fast Food Assignment, Exam 1]
- Identify the function of carbohydrates in the body. [M2A1: Fast Food Assignment, Exam 1]
- Identify the role of photosynthesis in cellular respiration. [M2A1: Fast Food Assignment, Exam 1]
- Classify the various types of carbohydrates. [M2A1: Fast Food Assignment, Exam 1]
- Identify the difference between various types of sweeteners. [Exam 1]
- Identify the advantages and disadvantages of artificial sweeteners. [Exam 1]
- Recognize the function of sugar alcohols in the body. [Exam 1]
- Classify the sweetness level of various types of sweeteners. [Exam 1]
- Identify various types of natural sweeteners. [Exam 1]
- Identify the various types of lipids. [Exam 1]
- Identify the function of lipid in the body. [Exam 1]
- Distinguish between the various types of lipids. [Exam 1]
- Identify the role of hydrogenation in lipids. [Exam 1]
- Identify common fat replacement strategies. [M2A1: Fast Food Assignment, Exam 1]
- Identify the function of proteins in the body. [M2A1: Fast Food Assignment, Exam 1]
- Identify various types of amino acids. [Exam 1]
- Classify the various types of amino acids. [Exam 1]
- Distinguish between complete, incomplete and complimentary proteins. [Exam 1]

Module 3: Vitamins and Minerals

After you have completed the readings and content for this module you will be able to:

- Identify fat-soluble vitamins. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify the function of fat-soluble vitamins in the body. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify water-soluble vitamins. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify the function of water-soluble vitamins in the body. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify dietary sources of different vitamins. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify results of deficiency of various vitamins. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify major minerals. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify the function of major minerals in the body. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify trace minerals. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify the function of trace minerals in the body. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify dietary sources of different minerals. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify results of deficiency of various minerals. [M3A1: Vitamins and Minerals Assignment, Exam 2]
- Identify toxicities resulting from over ingestion of various minerals. [M3A1: Vitamins and Minerals Assignment, Exam 2]

Module 4: Water and Phytonutrients

After you have completed the readings and content for this module you will be able to:

- Identify the role water plays in the body. [Exam 2]
- Identify the various sources of water. [Exam 2]
- Identify common sources of water pollution and contaminants. [Exam 2]
- Identify the impact of water pollution and contaminants on the human body. [Exam 2]
- Identify the various treatments used to reduce contaminants from water. [Exam 2]
- Categorize phytonutrients. [Exam 2]
- Identify the function of phytonutrients. [Exam 2]
- Identify the food sources of phytonutrients. [Exam 2]

Module 5: Facts, Digestion, and Metabolism

After you have completed the readings and content for this module you will be able to:

- Read and interpret food nutrition facts labels. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Identify which nutrition label facts are mandatory and which are elective. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Record their dietary intake for the week. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Select food to substitute for their consumed foods that would result in a caloric reduction. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Calculate their substituted caloric intake. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Identify the anatomy of the digestive system. [**M5A1: Before and After Grocery List Assignment, Exam 3**]
- Identify the function of the various components of the digestive system. [**Exam 3**]
- Identify the processes that occur in the digestive system. [**Exam 3**]
- Identify the role other bodily organs play in the digestion of food. [**Exam 3**]

Module 6: Controversies, Energy Balance and Weight Management

After you have completed the readings and content for this module you will be able to:

- Discuss the pros and cons of various nutrition topics. [**M6A1: Nutrition Controversy Research Paper, Exam 4**]
- Locate sources to support a position on a nutrition topic [**M6A1: Nutrition Controversy Research Paper, Exam 4**]
- Identify the role of food energy intake and body weight. [**Exam 4**]

Module 7: Diets and Nutritional Supplementation

After you have completed the readings and content for this module you will be able to:

- Identify examples of diets and their modes of action. [Exam 4]
- Identify factors that contribute to energy balance in the body. [Exam 4]
- Identify the concept of set point theory. [Exam 4]
- Identify various types of nutrition supplements. [Exam 4]
- Identify the pros and cons of various nutrition supplements. [Exam 4]
- Recognize the role of the FDA in supplement labeling. [Exam 4]
- Define obesity. [Exam 4]
- Identify the health issues associated with obesity. [Exam 4]
- Recognize the role of nutrition in obesity. [Exam 4]
- Identify the anatomy and physiology of the pancreas. [Exam 4]
- Identify and distinguish between the three types of diabetes. [Exam 4]
- Identify low and high glycemic foods. [Exam 4]
- Identify the symptoms of diabetes. [Exam 4]
- Identify the effects of diabetes on the body. [Exam 4]
- Identify ways to prevent, control and treat diabetes. [Exam 4]

Module 8: Through the Life Cycle

After you have completed the readings and content for this module you will be able to:

- Identify common cardiovascular pathologies. [Exam 5]
- Recognize the role of nutrition in cardiovascular pathology. [Exam 55]
- Identify the various types of cancer. [Exam 5]
- Define cancer and vocabulary related to cancer. [Exam 5]
- Recognize the role of nutrition in getting cancer. [Exam 5]
- Recognize the role of weight in increased risk of getting certain cancers. [Exam 5]
- Recognize health habits that increase the risk of getting cancer. [Exam 5]
- Recognize the role of nutrition through the life cycle. [Exam 5]