Table of Contents

Course Syllabus..............................................................................................................2  
About the Instructor  
Prerequisites  
Required Materials  
Recommended Materials  
Course Description  
Learning Outcomes  
Assignments  
Submitting Completed Lesson Assignments  
Examination  
Scores, Points & Course Grades  
Course Outline  

Lesson 1  Introduction ........................................................................................................7  
Lesson 2  Healthful Diet Design, Food & Physiology ......................................................12  
Lesson 3  Carbohydrates ....................................................................................................16  
Lesson 4  Lipids ....................................................................................................................19  
Lesson 5  Protein ...................................................................................................................23  
Lesson 6  Energy, Weight, Eating Disorders & Activity ....................................................26  
Lesson 7  Vitamins ...............................................................................................................30  
Lesson 8  Minerals...............................................................................................................33  
Lesson 9  Lifecycle ..............................................................................................................37  
Lesson 10 – Consumer & Global Nutrition...............................................................40  
Final Exam Information .....................................................................................................43  
Self Quiz Key .....................................................................................................................44  

Project Forms & Information Sheets...............................................................................45  

 Lesson 1 Information Sheet: Estimating Portion Size  
 Lesson 2 Project Form  
 Lesson 2 Information Sheet: MyPlate Food Group Servings  
 Lesson 4 Information Sheet: Improving Fat Intake  
 Lesson 6 Activity Form  
 Lesson 6 Information Sheet: Cost of Activity Table
About the Instructor

Instructor: Deborah Ocken
Email Address: deborah.ocken@seattlecolleges.edu
Message Number: 762-333-2231 (Google Voice Message)

My educational and professional background is in nutrition and wellness. I have worked in public health research, government programs and policy and in education.

My goals as your instructor are to provide a good scientific foundation so you can be informed and discerning consumers of nutrition and health information. This course will also give you the information and skills needed to know how to eat healthfully throughout life. I routinely updated course content to reflect current nutrition and health information and policy.

Anytime you have questions about this course, please email me.

Prerequisites

eligibility for MAT 084 and ENG 101

Required Materials

Textbook
*Understanding Nutrition*, 12ed,
by Whitney and Rolfes
Wadsworth, Cengage Learning, 2011

You may purchase a new or used book. If you purchase a book that does NOT come with an access code card to the diet software, you can purchase the software separately. Email me if you have any question about the required materials.

On-line Diet Analysis Software

*Diet Analysis Plus version 10*

The access code for on-line diet software is printed on a card that comes bundled with new textbooks sold at the SCCC bookstore. If you are buying a USED book, it will probably not include an access code for the on-line diet software. You can purchase the assess code for the software separately at the SCCC Bookstore or through on-line vendors.

Recommended Materials

*Annual Editions: Nutrition*
McGraw-Hill/Dushkin
*A great source of current articles for the article summary assignments.*
Textbook Website
If you are interested in accessing FREE on-line resources from the textbook publisher (website links for each chapter, flashcards, news videos, etc) go to this site: http://login.cengage.com/sso/
  • Once logged on, you will need to click Create a new Student Account link.
  • On the new window that pops up, ignore the request for a code, instead, click on the link, I Don’t Have an Access Code or Course Key
  • On the next screen, you will need to enter a ISBN for our text, ENTER this number: 0538734655
  • The image of our textbook will appear, click ADD on this screen.
  • Now, you will need to create an account and agree to the usual legal statement.
  • Then you should be given access to the free student site for the textbook.

I create a blog for this course containing lectures, website links and electronic versions of all course materials. If you provided an email address to the college when registering, I will email you an invitation to the blog. Email me if you have not received an invitation to access this blog and would like one.

Course Description
NTR 150 is an introduction to nutrition, emphasizing relationship of nutrition to growth, development, health, physical and mental functioning. Students will examine the sources, functions, interrelationships and human requirements of nutrients.

Learning Outcomes
Upon completion of this course, students will be able to:
- identify credible, scientific sources of nutrition information
- identify the essential nutrients, their functions and good food sources
- describe food choices which promote optimal wellness
- apply various tools to assess and create a healthful diet
- describe a safe and effective weight management program
- describe signs and symptoms of eating disorders and the general approach to treatment
- list the three types of fitness and describe the recommendations for each type
- discuss the risk factors for cardiovascular diseases, cancers and type 2 diabetes
- describe how to prevent food poisoning
- describe the issues and controversies of food technology
- identify the unique nutrient needs through the lifecycle
- discuss hunger, the causes, and programs which help to alleviate hunger

Assignments
Nutrition 150 by Correspondence is made up of ten lessons and one exams. The lessons are made up of the following assignments:

Reading Assignment & Lesson Objectives
See the Course Outline on page 6 for each lesson’s reading assignment. Use the Lesson Objectives for each lesson as a study aid and a way to focus study time and prepare for the final exam.
Article Summary (20 points)
For all article summary assignments except for Lesson One follow the instructions below: (See Lesson One for the specific instructions for that article summary assignment.)

Find an article on a topic from that lesson’s reading. Acceptable sources for these articles are credible, scientific websites, articles from: Annual Additions: Nutrition (see Recommended Materials) or from scientific journals. Articles selected should be at least two to three pages in length (approximately 1000 words minimum). Do NOT use press releases or news releases. If you have any questions about a specific source you would like to use, please email me.

In your summary, include the name of the source (for example the name and address of the website**) and the title of the article. Describe in about two to three sentences why you chose the article. Then summarize in your own words the information you learned from the article. If using a quote from the article, it should be no more than two sentences. Use quotation marks to denote all quoted material in your review. CAUTION: Plagiarized reviews will be returned with a 0 score. Learn what plagiarism is and how to avoid: www.plagiarism.org.

**TIP: Copy the address of the website from your browser window when viewing your article and paste directly into your assignment document. If you are using a search engine that requires you to enter your username and password, give the name of the journal, date of publication, name of article and the first author’s name. IF using articles from Annual Editions: Nutrition, simply give the name of the article and state the source, Annual Editions.

Minimum length: 300 words. Type your review, 12 point font, double space, one inch margins.

Projects (25 points)
Eight lessons include a project assignment. See each lesson for complete directions for the projects.

Self-quizzes (5 points)
Each lesson includes a 15 question self-quiz. The questions are based on the lesson objectives. The the answer key is found at the back of this guide. The quizzes are study aids: Report your score you will receive 5 points regardless of your score on the quiz.

Submitting Completed Lesson Assignments
You may submit your lesson assignments in several different ways—

- **In-Person** at the SCCC Distance Learning Office
- **By mail**, address to--
  - SCCC Distance Learning Office
  - 1701 Broadway, BE 1140
  - Seattle, WA 98122
- **By email**, to your instructor, deborah.oenix@seattlecolleges.edu

To Submit In-Person or by Mail to the SCCC Distance Learning Office:
Attach a lesson ID form your received for each lesson to your assignments. (These forms are provided with your course study guide and course packet.) If you would like to have your lessons returned by mail, include a self-addressed, stamped envelope.

To Submit by Email:
Attach to an email message your article summary assignment as one attachment and your project as a second attachment. I accept these formats for documents: .doc, .docx, .rtf, and .pages. Report your quiz score(s) by typing your score(s) into the body of the message. In the subject line of your message, type the course name, the number of the lesson and your name. For example: NTR150, Lesson 1, Jones. No lesson ID form is needed if emailing assignments.
Feedback
All lesson assignments are returned with scores and instructor feedback. Lessons dropped off or mailed to the Distance Learning Office will be returned as directed by the student—for pick-up or mailed (self-addressed, stamped envelope is required). Lessons emailed will be returned by email. My goal is to return submitted lesson assignments within seven days of receiving. At times the turn-around time will be longer: at the end and beginning of each quarter and during the Summer and December breaks.

Accepted Pace of Lesson Completion
Submit no more than two lessons in any seven (7) day period. I highly recommend a lesson completion pace of one lesson in any seven day period.

If you have questions about these instructions or anything else related to this course, please email me.

Examinations
The course includes a proctored final examination (100 points). Arrangements can be made to take the exam on the SCCC campus. If taking off-campus, students will need to make their own arrangements for a proctor.. (For complete information, see the Exam Request Form and the Student Handbook that came in your course packet.)

The exam consists of 100 multiple-choice questions and is comprehensive: it covers the material from Lessons 1 through 10. It is closed-book and timed with a two (2) hour time limit. No notes, books or any electronic devices of any kind are allowed during testing (with the exception of translation devices).

To review for the exam, study the lesson objectives, quizzes and the project objectives.

Scores, Points & Course Grades

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points Possible</th>
<th>Total Points</th>
<th>Percent of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects</td>
<td>8 @ 25 points</td>
<td>200</td>
<td>36</td>
</tr>
<tr>
<td>Article Summaries</td>
<td>10 @ 20 points</td>
<td>200</td>
<td>36</td>
</tr>
<tr>
<td>Self-Quizzes</td>
<td>10 @ 5 points</td>
<td>50</td>
<td>9</td>
</tr>
<tr>
<td>Exam</td>
<td>100 points</td>
<td>100</td>
<td>18</td>
</tr>
<tr>
<td><strong>total points</strong></td>
<td></td>
<td><strong>550</strong></td>
<td></td>
</tr>
</tbody>
</table>

Course Grades

<table>
<thead>
<tr>
<th>Percentage of Total Points</th>
<th>Letter Grade</th>
<th>Numerical Grade (4.0 scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 to 100%</td>
<td>A</td>
<td>3.5 to 4.0</td>
</tr>
<tr>
<td>80 to 89%</td>
<td>B</td>
<td>2.5 to 3.4</td>
</tr>
<tr>
<td>70 to 79%</td>
<td>C</td>
<td>1.5 to 2.4</td>
</tr>
<tr>
<td>60 to 69%</td>
<td>D</td>
<td>0.7 to 1.4</td>
</tr>
<tr>
<td>below 60%</td>
<td>E</td>
<td>0.0</td>
</tr>
</tbody>
</table>
**Americans with Disabilities Act Statement:** If you need course adaptations or accommodation because of a disability, if you have emergency medical information to share with your instructor, contact your instructor as soon as possible to discuss.

## Course Outline

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Reading Assignment</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Nutrition</td>
<td>Chapter 1 Highlight 1</td>
<td>Analyze a Five-Day Diet</td>
</tr>
<tr>
<td>2</td>
<td>Healthful Diet Design</td>
<td>Chapters 2 &amp; 3 Highlight 4 plus pages 620 - 625</td>
<td>Explore Balance using a Food Group Guide</td>
</tr>
<tr>
<td>3</td>
<td>Carbohydrates</td>
<td>Chapter 4 Highlight 4</td>
<td>Explore Fiber Intake</td>
</tr>
<tr>
<td>4</td>
<td>Lipids</td>
<td>Chapter 5 Highlight 5 pages 608 - 618</td>
<td>Explore Fat Intakes</td>
</tr>
<tr>
<td>5</td>
<td>Protein</td>
<td>Chapter 6 Highlight 2 pages 625 - 629</td>
<td>Explore Protein Intake</td>
</tr>
<tr>
<td>6</td>
<td>Energy, Weight &amp; Activity</td>
<td>Chapter 7, 8, 9 &amp; 14 Highlights 8 &amp; 9</td>
<td>Analyze a One-Day Activity Record and Create a Fitness Plan</td>
</tr>
<tr>
<td>7</td>
<td>Vitamins</td>
<td>Chapters 10 &amp; 11 Highlights 10 &amp; 11</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Minerals</td>
<td>Chapters 12 &amp; 13 Highlights 12 &amp; 13 pages 618 - 620</td>
<td>Explore Vitamin &amp; Mineral Intakes</td>
</tr>
<tr>
<td>9</td>
<td>Life Cycle Nutrition</td>
<td>Chapters 15, 16 &amp; 17 Highlights 7, 15 &amp; 16</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Consumer &amp; Global Nutrition</td>
<td>Chapters 19 &amp; 20 Highlights 19 &amp; 20</td>
<td>Create an Ideal Diet</td>
</tr>
</tbody>
</table>

**FINAL EXAM**
Lesson One: Introduction

Reading Assignment & Lesson Objectives

Chapter 1 An Overview of Nutrition
Highlight 1 Nutrition Information and Misinformation

- Briefly describe the relationship of nutrition to health.
- List the leading causes of death which are related to nutrition.
- List the six classes of nutrients.
- List which nutrients provide energy and how many calories per gram are found in each of these nutrients.
- Describe the differences between the results produced from an epidemiological study, a laboratory study and a human study.
- Define in one sentence Dietary Reference Intakes (DRIs).
- List the four sets of values that make up the DRIs.
- Identify several sources of reliable nutrition information.
- Define the following terms:
  * organic (as related to chemistry)
  * essential nutrient
  * calorie
  * gram
  * sample size
  * randomization
  * control group
  * experimental group
  * double-blind study
  * placebo/placebo effect
  * correlation
  * peer-review
  * chronic disease
  * risk factor

Article Summary (20 points)

For this first article summary assignment, the objective is to learn how to find and judge the credibility of sources, specifically, websites. Several different resources will help you learn more about judging websites:

The National Library of Medicine website on evaluation internet health information:

The SCCC Library provides excellent resources for this assignment and future article searches. Here’s the link for a short tutorial on evaluating websites:

In addition, pages 28 - 29 in your text provides a list of questions to help determine the credibility of a website.

After exploring these sources, find two different websites which focus on the topic of nutrition. Apply the information from the resources above to evaluate both of these websites. In your assignment, state the various evaluation criteria you used and how the website did or did not meet it. I suggest finding a website that you believe is a credible source of information and a second one that appears to NOT be a credible source. That way you can compare and contrast the two sites.
Submit the names and addresses of both sites and your complete evaluation of both. Conclude each evaluation with your answer to this question: Is this website a credible source of information?

Suggested minimum length: 300 words

Project One: Five-Day Diet Record and Analysis (25 points)

Objective
Observe and record your diet. Use diet analysis software to analyze your diet. You will use the results of this analysis in future diet projects.

Materials
✓ a 5-day diet record
✓ Lesson 1 Information Sheet (Estimating Portion Sizes)
✓ access to diet software (see information on Required Materials, page 2)

What to Submit
Your Custom Averages Report (a PDF) See instructions below.

Instructions

Step 1. Record Your Diet
The first step of this analysis is to keep a five-day diet record. A five-day diet record gives a better perspective of the nutrient intake of an individual compared to a one or two-day diet record.

For five days, you will write down everything you eat and drink. You may keep track of your diet for five consecutive days or record your diet every other day.

When completing your food record, follow these important instructions:

- Record days that reflect your typical diet. If you are sick, traveling, or otherwise eating in an atypical way, avoid recording these days.
- Write down everything you eat and drink on the same day you consume it.
- Measure the amount you consume, your portion, for each item at least once, such as on the first day you record your diet. Most people underestimate their portion sizes by as much as 30%.
- Use common American household units of measure like cups, tablespoons and ounces. Use grams if you know the weight in grams or are comfortable with the metric system.
- Caution: Fluid ounces are not the same as ounces for weights. For solids, use ounces (oz) if you know the weight. Otherwise, use another unit of measure like cups.
- Use food labels to help determine your portion size.
- For more accurate results, list the ingredients for mixed dishes separately. For foods that contain many different items, estimate the amount of each ingredient. For example, instead of recording "beef and bean burrito," record "beef, beans, tortilla, salsa and rice." Then do your best to estimate the amount of each item in the burrito.

Step 2. Enter Your Record into Diet Analysis Plus software
Log on to Diet Analysis Plus 10. (http://daplus10.cengage.com)
The software has a video Tutorial!! See the link to the tutorial in the upper right corner of the screen after logging on.

Create a Profile in the software.
You will use this profile only once during this course, for this first project, your 5-day diet analysis. DO NOT DELETE this profile or any of the entered days in this profile once you are done with this project. However, you may edit foods in this profile later to improve the accuracy of your results.
After completing your profile, click on TRACK DIET to enter the foods/beverages from your five-day record into the software. **When completing your food record, follow these important instructions:**

Ideally, enter your diet into the software on the same day you consume it. The software gives many options when searching for a food. Your memory will be better if you enter your diet on the same day you eat it.

If the search results do not match the exact food you ate, find a result that resembles the food you consumed. Think in terms of what kinds of nutrients your food contains versus other qualities like favors. (Example, strawberry yogurt and peach yogurt are not significantly different nutrient-wise.)

**USE ONLY generic choices (versus brand-named items) when entering your items.** Though the generic choices may not be an exact match they provide complete nutrition information. Brand-Named entries do not give complete nutrient information. Using brand-named foods may result in inaccurately low intakes of many vitamins and minerals.

Avoid using "ITEM" or "SERVING" when entering an amount. For foods which varies in size (e.g., pork chop, muffin, burrito) entering "item" for your the portion size can lead to inaccurate results. Exception: The "item" size is very consistent and uniform, such as one can of soda, one medium apple, one oreo cookie.

**DO NOT enter supplements (pills) or supplemental foods.** These include such as protein drinks or meal-replacement bars, like Cliff Bars. The results of this project will give you information about the nutrient contribution of the foods in your diet. After seeing this information, you can better answer the question of the need for supplementation.

**Step 3. Submit Your Completed Project**

After all 5 days are entered into Diet Analysis Plus, create a report which can be submit as an attachment to an email message or printed out and submitted. After logging on to your account:

- Click on **Reports** tab in the software.
- Click on the link, **Custom Averages**.
- Check the START date: it should be the first day you entered your food record into the software. (The calendar highlights each date of your food record with a green square.)
- And the END date: the last day of your entered food record.
- Click on **Print Custom Report** button.
- You will now see a new window showing your report. **SAVE THIS REPORT TO YOUR COMPUTER.** The name will automatically be **Custom Report.** ADD YOUR LAST NAME to the name of your saved file, a pdf. (Example: Custom Report_Jones.pdf)
- Submit this project with your other lesson assignments either as an attachment (your Custom Report pdf) to an email message if you submit your assignments by email, OR as a printed copy of your Custom Report if you submit your lessons to the Distance Learning Office.

I will review your diet project and give feedback including, if appropriate, suggests on how to improve the accuracy and completeness of your results.
Self-Quiz (5 points)
Use this quiz as a study aid. Correct your answers using the key found in the back of this guide. Submit ONLY your score(s) for the quiz. You will receive 5 points credit regardless of your score.

1. Features of a chronic disease include all of the following except
   a. it develops slowly.
   b. it lasts a long time.
   c. it produces sharp pains.
   d. it progresses gradually.

2. Which of the following is not one of the six classes of nutrients?
   a. Fiber
   b. Protein
   c. Minerals
   d. Vitamins

3. What is the benefit of using placebos in an experiment?
   a. All subjects are similar
   b. All subjects receive some type of treatment though one treatment is inactive
   c. Neither subjects nor researchers know who is receiving treatment
   d. One group of subjects receives a treatment and the other group receives nothing

4. An essential nutrient is one that cannot be
   a. found in food.
   b. degraded by the body.
   c. made in sufficient quantities by the body.
   d. used to synthesize other compounds in the body.

5. Which of the following most accurately describes the term organic?
   a. Products sold at health food stores
   b. Products grown without use of pesticides
   c. Foods having superior nutrient qualities
   d. Substances with carbon-carbon or carbon-hydrogen bonds

6. Gram for gram, which of the following provides the most energy?
   a. Fats
   b. Alcohol
   c. Proteins
   d. Carbohydrates

7. What is the meaning of a double-blind experiment?
   a. Both subject groups take turns getting each treatment
   b. Neither subjects nor researchers know which subjects are in the control or experimental group
   c. Neither group of subjects knows whether they are the control or experimental group, but researchers know.
   d. Both subject groups know whether they are in the control or experimental group, but researchers do not know

8. What is the benefit of using controls in an experiment?
   a. The size of the groups can be very large
   b. The subjects do not know anything about the experiment
   c. The subjects who are treated are balanced against the placebos
   d. The subjects are similar in all respects except for the treatment being tested
9. Which of the following is **NOT** a set of values within the Dietary Reference Intakes (DRIs)?
   a. Adequate Intakes
   b. Food Group Serving Recommendations
   c. Tolerable Upper Intake Levels
   d. Recommended Dietary Allowances

10. What does the *Tolerable Upper Intake Level* of a nutrient represent?
   a. The maximum amount allowed for fortifying a food
   b. A number calculated by taking twice the RDA or three times the AI
   c. The maximum allowable amount available in supplement form
   d. The maximum amount from all sources that appears safe for most healthy people

11. The Dietary Reference Intakes may be used to
   a. treat people with diet-related disorders.
   b. assess adequacy of all required nutrients.
   c. plan and evaluate diets for healthy people.
   d. assess adequacy of only vitamins and minerals.

12. Which of the following leading causes of death in the U.S. does not bear a relationship to diet?
   a. Cancer
   b. Heart disease
   c. Diabetes mellitus
   d. Pneumonia and influenza

13. Which of the following statements describes the association between a *risk factor* and the development of a disease?
   a. All people with the risk factor will develop the disease
   b. The absence of a risk factor guarantees freedom from the disease
   c. The more risk factors for a disease, the greater the chance of developing that disease
   d. The presence of a factor such as heredity can be modified to lower the risk of degenerative diseases

14. How are the DRIs for almost all vitamin and mineral intakes set?
   a. Low, to reduce the risk of toxicity
   b. High, to cover virtually all healthy individuals
   c. Extremely high, to cover every single person
   d. At the mean, to cover most healthy individuals

15. Carbohydrates and proteins provide ____ calories/gram. Fats provide ____ calories/gram.
   a. 3; 6
   b. 4; 9
   c. 5; 7
   d. 9; 4

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Two: Designing a Healthful Diet & Food & Physiology

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 2: Planning a Healthy Diet
- Define the following diet-planning principles
  * Adequacy
  * Balance
  * Nutrient Density
  * Variety
- List the food groups of the MyPlate food Guide (Formerly known as the MyPyramid Food Guide). For each food group, identify foods that belong in the group and several nutrients provided by the group. For each food group, identify a serving size.
- Describe the difference between refined, enriched and whole grain.
- Evaluate a food label for key ingredients, nutrient content and health claims.

Chapter 3: Digestion, Absorption and Transport
- Describe the digestion of a cheese sandwich (carbohydrate, protein and fat) at the following points as it moves through the gastro-intestinal tract:
  * mouth
  * stomach
  * small intestine
  * large intestine
- Identify the roles of each of the following digestive organs:
  * gallbladder
  * pancreas
  * liver

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.

Lesson 2 Project: Exploring Balance in Your Diet (25 points)

Objective
Apply the MyPlate Food Guide (formerly known as MyPyramid) to evaluate and improve the balance of one day of your analyzed diet.

The MyPlate Food Guide gives us a way to evaluate balance in a diet. From the readings you learned that balance is one of the five diet-planning principles. This word has many meanings. One way to define balance is: a balanced diet meets the MyPlate serving recommendations for each of the five food groups plus oils. The idea is that if a diet is balanced, then it will more likely be an adequate diet.
Lesson 2 Project (continued)

Materials Needed
- a one-day diet record (You can use one of the days you recorded for the Lesson 1 project.)
- **Lesson 2 Project Form** (found in the back of this guide)
  (If submitting assignments via email, email your instructor, Deborah, to request an electronic version of this form or find the form on the course blog.)
- **Lesson 2 Information Sheet: MyPlate Food Group Servings** (found in the back of this guide)
- [www.myplate.gov](http://www.myplate.gov), a helpful source of information,

What to Submit
- your completed Lesson 2 form
- your answers to the question below

Instructions

**Complete the Lesson 2 Form** (found in the back of this guide) with the following information from your one-day diet record. (See example below):
- a description of each item consumed AND the exact amount consumed (your portion). Use common measures like cup, oz. gram, teaspoon. NOTE: Use ounces (oz) only for fluids and items you know the weight of. *(For example, do not list 8 oz of cereal or 4 oz lettuce. This implies 1/2 lb or 1/4 lb in weight not 1 cup or 1/2 cup.)*
- the number of food group “servings” for each item listed. Your portion may or may NOT be equal to a food group serving. See the **Food Group Information Sheet** and your text for more information.
- for items that fall under **Oils** and **Empty Calories**, simply record an "X" for the number of servings or calories.

Complete the bottom of the form with:
- your total servings for each food group.
- your recommended servings for each food group and the calorie level for this set of servings. (See page 42 in your text.)

To find your calorie level, you will need to estimate your daily calorie need. You may use many different sources such as, 1. Your average calorie intake shown in your reports from your 5-day diet analysis. 2. A very general estimate shown on page 42 of the text, *Estimated Daily kCalorie Needs for Adults* or 3. Go to [www.myplate.gov](http://www.myplate.gov), enter a profile then use the SuperTracker feature. See *My Plan* to see your estimated calorie needs. Regardless of your source to find a calorie estimate, do not use an amount any lower than 1600 calories. (A good **minimum** calorie intake for healthy adults.)

- your answer to the question, *Servings needed to achieve balance.* That is, how did the total serving for each food group compare to the recommended servings? Enter a 0 if your intake met the recommended servings (no change needed) or the number of servings above or below the recommended servings. See example below.

**Question**

Discuss how to balance this diet.
If your total servings were above or below the recommended servings for any food group, list examples of specific foods or beverages you could add or subtract from this diet in order to meet the recommended servings for each group. Be specific! Give an example of a specific food or beverage and state an exact amount to add or subtract in order to meet the recommended servings for a food group. Repeat until the diet is balanced!

*For example, in the diet above, by omitting the two (4 oz) of sausages and adding ½ cup of carrots as a snack, the Protein group servings are reduced to 5 (which meets the recommended servings for the Protein Group) and Vegetable servings increase by ½ serving. Adding a slice (1.5oz) of hard cheese like Swiss cheese to the bagel instead of cream cheese improves the Dairy servings by 1 cup. Bonus: Both changes also help to reduce empty calories. (This is only a partial answer: some additional improvements are still needed to balance this diet).*
## Example

<table>
<thead>
<tr>
<th>Food/Beverage</th>
<th>Amount your portion</th>
<th>Grain OZ</th>
<th>Vegetable CUPS</th>
<th>Fruit CUPS</th>
<th>Protein OZ</th>
<th>Dairy/Substitutes CUPS</th>
<th>Oils</th>
<th>Empty Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain bagel</td>
<td>4 oz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream cheese</td>
<td>2 T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 eggs, scrambled w/ oil</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 sausages</td>
<td>~4 oz</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange juice</td>
<td>1 cup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium cheeseburger, mayo</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>x (mayo)</td>
<td>x (dairy &amp; meat fat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fries, small</td>
<td>~1 cup</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coke</td>
<td>12 oz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sm green salad, dressing</td>
<td>1 cup</td>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td>x (dressing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple, small</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Servings**

**Your Serving Recommendations**

**Servings Needed to Achieve Balance**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>1/2</th>
<th>2</th>
<th>3</th>
<th>5</th>
<th>2</th>
<th>1.0</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain bagel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream cheese</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 eggs, scrambled w/ oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 sausages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange juice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium cheeseburger, mayo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fries, small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coke</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sm green salad, dressing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple, small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The information in parenthesis is added to give some explanation about the sources of these oils or empty calories. You do not need to add these kinds of details to your form. Though you may!

### Self-Quiz (5 points)

Take this quiz at least once. Correct your answers using the key in the back of this guide. Report your score for 5 points credit. (Credit is given regardless of your score.)

1. **Nutrient dense** refers to foods that:
   a. carry the USDA nutrition labeling.
   b. are higher in weight relative to volume.
   c. provide more nutrients relative to kcalories.
   d. contain a mixture of carbohydrate, fat, and protein.

2. Which of the following is **not** a feature of a food group plan?
   a. Defines serving equivalents
   b. Considered a tool for diet planning
   c. Sorts foods of similar sugar and fat content
   d. Specifies the number of servings from each group

3. A food label ingredient list reads in the following order: Wheat flour, vegetable shortening, sugar, salt, and cornstarch. What item would be found in the smallest amount in the food?
   a. Salt
   b. Sugar
   c. Cornstarch
   d. Wheat flour

4. After nutrients are absorbed (move from the gastrointestinal tract into the bloodstream), what organ is first to receive them?
   a. Liver
   b. Heart
   c. Lungs
   d. Kidneys

5. Which of the following demonstrates a diet with good **variety**?
   a. consuming a daily diet of both fruits and vegetables
   b. instead of rolls, choosing pasta or flour tortillas
   c. baking rather than frying chicken
   d. for dinner prepare spinach, carrots, potatoes and black beans
6. Which of the following must be added to refined grains by law?
   a. Zinc
   b. Folate
   c. Protein
   d. Calcium

7. Food labels express the nutrient content in relation to a set of standard values known as the:
   a. Daily Values.
   b. FDA Standards.
   c. Reference Dietary Intakes.
   d. Recommended Dietary Intakes.

8. Why is there little or no digestion of starch in the stomach?
   a. Mucus inhibits starch breakdown
   b. Stomach enzymes are dysfunctional
   c. Starch should not be eaten with protein
   d. Salivary enzymes do not work in an acid environment

9. All of the following are true of regarding the nutrient enrichment of refined flours except
   a. It includes products such as pastas.
   b. Fiber levels are similar to those in the whole grains.
   c. It is required of all refined grain products that cross state lines.
   d. Thiamin and riboflavin are added in amounts exceeding their levels in the whole grain.

10. “A diet which provides all the nutrients, fiber, and energy in sufficient amounts” is the definition of:
    a. variety.
    b. adequacy.
    c. moderation.
    d. kcalorie control.

11. Which of the following product labels always denotes a whole-grain product?
    a. Multi-grain
    b. 100% wheat
    c. Whole-wheat
    d. Stone-ground

12. Which of the following describes the anatomy of the gastrointestinal tract?
    a. A vat-like vessel
    b. A rigid, solid tunnel
    c. A flexible muscular tube
    d. A firm, duct-like channel

13. According to the MyPlate (formerly called the MyPyramid) food guide, all of the following provide Oils except:
    a. butter
    b. seeds
    c. avocados
    d. mayonnaise

14. What is the primary site for absorption of nutrients?
    a. stomach
    b. liver
    c. small intestine
    d. large intestine (or colon)

15. The process by which food is broken down into absorbable components is called
    a. digestion.
    b. absorption.
    c. intestinalis.
    d. mastication.
Lesson Three: Carbohydrates

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 4: The Carbohydrates: Sugars, Starches and Fibers
- Identify simple and complex carbohydrates, and the monosaccharides, disaccharides and polysaccharides.
- For each of the following carbohydrates, list two food sources:
  * fructose
  * sucrose
  * glucose
  * lactose
- Describe the structure and function of glycogen.
- Define fiber and list several good food sources.
- Briefly outline the digestive process for carbohydrates.
- Describe the symptoms, cause and some suggestions to manage lactose intolerance.
- Describe how blood glucose levels are maintained with hormones.
- Define the glycemic index and discuss its limitations for practical use.
- Discuss the recommendations for added sugars.
- Discuss the health benefits of fiber in the diet and the identify the recommended intake for fiber.
- Define the following:
  * insulin
  * glucagon
  * hypoglycemia

Pages 620 - 625 Diabetes Mellitus
- Identify the symptoms, causes and treatment for diabetes. Focus on Diabetes Mellitus, Type 2.

Highlight 4: Carbs, Kcalories and Controversies

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.

Lesson Three Project: Fiber (25 points)
Objective
Analyze your fiber intake and explore how the dietary characteristic of BALANCE relates fiber intake

Materials Needed
- Reports from your 5-day diet analysis (Lesson One Project):
  √ Intakes vs Goals
  √ MyPlate Analysis
  √ Daily Food Log
- Your Lesson 2 Project (and feedback)
TIP: To quickly find fiber sources in your analyzed diet: Log in to the on-line diet software and click on Reports. Click on the Source Analysis report and select the nutrient FIBER to see all of the sources of fiber in your diet. Look for foods that provide two grams of fiber or more in a portion.

What to Submit
The answers to the questions below.

Questions
1. What is your average total fiber intake in grams [also known as Dietary Fiber] and your DRI for fiber? See your Intakes vs Goals report.

2. Compare to your average fiber intake to your recommended fiber intake. Was your diet adequate for fiber, that is, did it meet or exceed the recommendation for fiber or was it short for fiber?

3. Discussion Question. This answer will cover all of the questions below. You may organize your answer in any way you wish. Use these questions as a guideline to your answer. Minimum answer length: 300 words.

Whole plant foods are the source of fiber in our diets. Review your diet for whole-plant-food choices. Discuss how your plant food choices in your diet lead to either your adequate average fiber intake OR your low fiber intake. In your answer, give specific examples of foods from your analyzed diet. These examples may be sources of fiber OR foods that could be changed in order to increase fiber intake. What improvements would you suggest to your diet to support an adequate fiber intake?

Review your diet report, MyPlate Analysis. This report shows recommended food group servings (Goal) and your average servings (Actual). Which food groups supply fiber? Explain your answer. Discuss how improving the balance of your diet also helps to improve fiber intake.

Self-Quiz (5 points)
1. Which of the following is a component of all three dietary disaccharides?
   a. Sucrose
   b. Glucose
   c. Fructose
   d. Galactose

2. What is another name for lactose?
   a. Milk sugar
   b. Fruit sugar
   c. Table sugar
   d. Artificial sugar

3. What is the primary organ that converts fructose to glucose following absorption?
   a. Liver
   b. Pancreas
   c. Skeletal muscle
   d. Small intestines

4. What term describes the most nutritious type of bread?
   a. whole grain
   b. enriched
   c. fortified
   a. 12 grain

5. What is the first organ to receive carbohydrates absorbed from the intestine?
   a. Heart
   b. Liver
   c. Pancreas
   d. Skeletal muscle
6. All of the following are symptoms of lactose intolerance except
   a. bloating.
   b. diarrhea.
   c. cramping.
   d. constipation.

7. Refined grains are enriched with which nutrients?
   a. iron and several B vitamins
   b. a variety of phytochemicals
   c. only fiber
   d. all of the nutrients lost during refinement

8. A person diagnosed with milk allergy would be sensitive to the milk’s
   a. fat.
   b. lactose.
   c. protein.
   d. minerals.

9. What is the first organ to respond to an increase in blood glucose concentration?
   a. Brain
   b. Liver
   c. Muscle
   d. Pancreas

10. When blood glucose concentration falls, what pancreatic hormone is secreted to stimulate release of stored glucose?
    a. Insulin
    b. Glucagon
    c. Epinephrine
    d. Cholecystokinin

11. When you are under physical stress, what hormone is released quickly to stimulate an increase in blood glucose concentration?
    a. Insulin
    b. Secretin
    c. Glucogen
    d. Epinephrine

12. In the time between meals, what organ releases glucose to help maintain normal blood glucose levels?
    a. Liver
    b. Pancreas
    c. Intestines
    d. Skeletal muscle

13. Before carbohydrates can be used as energy, the body breaks them down to ___________.
    a. maltose.
    b. glucose.
    c. glycogen.
    d. sucrose.

14. Which of the following is true about type 2 diabetes (the most common type)?
    a. Many people with type 2 diabetes are obese.
    b. Most people who have type 2 diabetes require insulin shots.
    c. Diabetes results chiefly from excess intake of sugar.
    d. The symptoms of Type 2 Diabetes cannot be reversed; they only get worse over time.

15. Which of the following is NOT a feature of high-fiber foods?
    a. Effective in weight control
    b. Provide feeling of fullness
    c. Usually lower in fat and simple sugars
    d. Provide more energy per gram than processed foods
Lesson Four: Fats

**Reading Assignment & Lesson Objectives**

Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

**Chapter 5** The Lipids: Triglycerides, Phospholipids and Sterols

- Identify the two (chemical) parts of a triglyceride.
- Define the following terms and list several food sources for each:
  - saturated fatty acid
  - monounsaturated fatty acid
  - polyunsaturated fatty acid
- Describe what factors determine how "saturated" a fatty acid is.
- List three ways an oil changes after it is hydrogenated.
- Briefly describe how triglycerides are digested, absorbed and transported in the body.
- Identify the prominent lipid in each of these lipoproteins and the function of each: Chylomicrons, VLDLs, LDLs and HDLs.
- Identify the functions of fats in the body
- Name the two essential fatty acids.
- Identify which fatty acids promote increases and which promote decreases in the lipoproteins, HDL and LDL.
- Discuss the relation of HDL and LDL blood levels to heart disease risk.
- Discuss why trans-fatty acids are a health risk.
- Identify common dietary sources of trans fatty acids.
- List the recommendations for the following:
  - total fat
  - saturated fat
  - omega-3 polyunsaturated fat (also known as linolenic acid)
  - omega-6 polyunsaturated fat (also known as linoleic acid)

**Highlight 5** High-Fat Foods--Friend or Foe?

- Identify the health benefits of monounsaturated fats.
- List several health benefits of adding nuts and fish to the diet.
- List the foods that should be limited in a healthy-fat diet and briefly describe why they should be limited.
- Identify the types of foods that are found in the Mediterranean Diet.

**Plus pages 608 - 618** Nutrition and Chronic Disease and Cardiovascular Disease

- Identify the key dietary risk factors for hypertension, diabetes (type 2), atherosclerosis and stroke.
- Briefly summarize the how atherosclerosis develops.
- Discuss the major risk factors for coronary heart disease (CHD) and list some ways to reduce risk.

**Article Summary** (20 points)

See page 4 of this guide for instructions about this assignment.

Reminder: Avoid sources that are not credible, "news," or "press releases" or very brief articles.
Lesson Four Project: Fats (25 points)

Objective
Analyze your fat intake and explore how the diet-planning principle of nutrient density relates to fat intake.

Materials Needed
- Lesson 4 Information Sheet: Improving Fat Intake (found at the back of this guide)
- Reports from your 5-day diet analysis (Lesson One Project):
  - Macronutrient Ranges
  - Fat Breakdown
  - Intakes vs. Goals
  - Intake Spreadsheets or Source Analysis (for individual fats)

What to Submit
The answers to the questions below.

Questions
1. List your average Fat Intake as a percentage of total calories. (Use the Macronutrient Ranges Report.)
2. Compare your average Fat intake to the recommendation--consume 20 to 35% of total calories from fats.
3. List your average saturated fat intake as a percentage of total calories. (Use the Intake vs Goals Report to find your average Saturated Fat intake in grams.) See how to calculate the percentage below!

   **Formula to find intake of saturated fats as a percentage of total calories.**
   Find your average intake of Saturate Fat (grams). This is the number under the Intake Column on the Intake vs Goals Report.
   
   Calculate your intake of saturated fats as a percentage of total calories with this formula:
   
   Saturated fats (grams) X 9 calories/gram = Saturated Fats Calories.
   
   (Saturated Fats Calories/Total Calories) X 100 = Percent of Calories from Saturated Fats

   **TIP:** Your answer will be probably between 5 and 15%.

4. Compare your saturated fat intake to the recommendation to consume no more than 7 to 10% of calories from saturated fats.
5. List the significant sources of fat in this diet. Look for foods/beverages that contribute 5 grams or more of fat in a typical portion**. (A typical portion is that amount you would consume in one sitting.). List each item only once.

   **TIP:** Use the Intake Spreadsheets and look at the values listed under Fat(g).

6. Rank the nutrient density of the foods you listed for #5. Rank each food as lower, moderate or higher in nutrient density. (See page 36 in your text for a description of nutrient density and see the color coded food examples of higher and lower nutrient density on pages 40 and 41.)

   **NOTE:** Larger servings may skew the results. (For example, bread is not a high fat food, but 4 slices are eaten at one time, you may see more than 5 grams of fat from that large portion size. Also look very high fat foods may be consumed in small amounts (like butter, margarine, dressings, oils) but are still sources of fat. List these high fat foods also.

7. Discussion Question: Use the Fat Project Information Sheet (found at the back of this guide) to discuss how to improve your fat intake for all types of fats: total fat, saturated fat, trans fat, monounsaturated fat, polyunsaturated fat (both omega-6 and omega 3) AND, at the same time, the overall nutrient density of your diet. Minimum answer length: 300 words.
Self-Quiz (5 points)

1. Lipids that are solid at room temperature are known as _______ while lipids that are liquid at room temperature are known as _________.
   a. fats; oils
   b. cholesterols; phospholipids
   c. trans fats; omegas

2. What compound is composed of 3 fatty acids and glycerol?
   a. Steroid
   b. Lecithin
   c. Triglyceride
   d. Monoglyceride

3. Which of the following describes a fatty acid that has one double bond?
   a. Saturated
   b. Hydrogenated
   c. Monounsaturated
   d. Polyunsaturated

4. Which of the following provides abundant amounts of omega-3 fatty acids?
   a. Palm oil
   b. Walnut oil
   c. Soybean oil
   d. Flaxseed oil

5. Which of the following lipids contain(s) saturated fat?
   a. Butter only
   b. Soybean oil only
   c. Cottonseed oil only
   d. Butter, cottonseed oil, and soybean oil

6. All of the following are rich sources of polyunsaturated fatty acids except
   a. palm oil.
   b. fish oils.
   c. soybean oil.
   d. safflower oil.

7. Oil that is partially hydrogenated sometimes changes one or more of its double bond configurations from
   a. cis to trans.
   b. solid to liquid.
   c. covalent to ionic.
   d. saturated to unsaturated.

8. Which of the following lipoproteins contains the highest percentage of cholesterol?
   a. Chylomicron
   b. Low-density lipoprotein
   c. High-density lipoprotein
   d. Very-low-density lipoprotein

9. What tissue contains special receptors for removing low-density lipoproteins from the circulation?
   a. Liver
   b. Adipose
   c. Arterial walls
   d. Skeletal muscle
10. What lipoprotein is responsible for transporting cholesterol back to the liver from the periphery?
   a. Chylomicron
   b. Low-density lipoprotein
   c. High-density lipoprotein
   d. Very-low density lipoprotein

11. A low risk of cardiovascular disease correlates with high blood levels of
   a. triglycerides.
   b. free fatty acids.
   c. high-density lipoproteins.
   d. very-low-density lipoproteins.

12. Which of the following lipids is an essential fatty acid?
   a. Lecithin
   b. Cholesterol
   c. Stearic acid
   d. Linoleic acid

13. Which of the following foods provide(s) essential fatty acids?
   a. Fish only
   b. Beef only
   c. Plants only
   d. Fish, beef, and plants

14. According to the Dietary Guidelines, what should be the maximum total fat intake as a percentage of energy intake?
   a. 10
   b. 20
   c. 35
   d. 50

15. A major feature of the Mediterranean diet is liberal intake of
   a. eggs.
   b. olive oil.
   c. lean meat.
   d. fortified butter.

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Five: Protein

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 6 Protein: Amino Acids
- Describe the basic structure of protein.
- Define essential amino acid.
- Very briefly describe how proteins are digested, absorbed and synthesized.
- Identify the roles that proteins play in our bodies.
- Define nitrogen balance. Give an example of a person in positive nitrogen balance and a person in negative nitrogen balance.
- List the two factors that influence protein quality.
- Identify high-quality proteins.
- Describe what a limiting amino acid is and what it limits.
- Identify foods that, when paired together, provide complementary proteins.
- Describe the typical sufferers and the symptoms of the two forms of protein energy malnutrition (PEM) marasmus and kwashiorkor.
- Identify the potential health risks of excessive protein intakes.
- State the RDA for protein for healthy adults.
- List the food groups which provide significant sources of protein.
- Briefly discuss the role of protein supplements in the diet.

Highlight 2 Vegetarian Diets
- Describe some of the types of vegetarianism (e.g. lactovegetarian, lacto-ovo-vegetarian, vegan).
- List several potential health benefits of a healthy vegetarian diet.
- List the nutrients which are typically lower in a vegetarian diet and those which are typically higher.
- Identify plants foods that are good replacements, nutritionally, for animal foods.

plus pages 625 - 629 Cancer
Identify the foods and cooking methods that are linked to an increased cancer risk.
List several recommendations for reducing cancer risk.

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,’’ or “press releases” or very brief articles.

Lesson Five Project : Protein (25 points)
Objective
Analyze your protein intake and explore how the diet-planning principle of variety relates to protein intake.

Materials Needed
- Reports from your 5-day diet analysis (Lesson One Project):
  - Intakes vs. Goals
  - Intake Spreadsheets
- Your Lesson 2 and 3 Projects (and feedback)
What to Submit
Your answers to the questions below.

Questions
1. List your average protein intake (grams) and your DRI for protein. (Find these values on the *Intake vs. Goals* report.). For your DRI, list both grams *and* the percentage of your DRI you consumed. (The percentage represents your average intake compared to your DRI.)

2. Compare your protein intake to the following recommendation: consume *at least 100% of DRI but no more than 200% of DRI.*

3. List the foods that contributed significant amounts of protein to your diet, that is 5 grams or more in a serving.

   **TIP:** Use *Intake Spreadsheets* to find foods that provided 5.0 grams or more protein in a serving. In addition, list foods that added up to significant amounts of protein by the end of the day because several servings were consumed (for example, breads or other grains).

4. **Discussion Question:**
   Discuss how your protein intake relates to the variety of food choices in your diet. Focus your answer on the variety of your choices from the Protein Food Group. That is, how many different types of foods did you consume from this group? Beef? Pork? Poultry? Eggs? Seafoods? Legumes? Seeds? Nuts? Review your answer to #3 to guide you. How could choices from this group be improved to maintain a good but not excessive protein intake while supporting an adequate fiber and healthy fat intake? Minimum answer length: 300 words.

Self-Quiz (5 points)

1. Which of the following is a feature of an essential amino acid?
   a. It is not necessary in the diet.
   b. It must be supplied by the diet.
   c. It can be made from excess amino acids in the body.
   d. It can be made from glucose in the body.

2. What is the typical protein intake for adults living in the U.S.?
   a. 100% of the RDA
   b. between 30-60 grams/day
   c. two to three times the RDA
   d. 5 to 8 ounces of meat

3. Which food group does **NOT** contribute good amounts of protein to the diet?
   a. grains
   b. legumes
   c. vegetables
   d. fruits

4. What is the process by which heat or acidity disrupts the normal shape of a protein chain?
   a. digestion
   b. condensation
   c. denaturation
   d. hydrogenation

5. Enzymes which breakdown proteins are commonly known as:
   a. proteases.
   b. hydrolyzers.
   c. pro-digestins.
   d. denaturases.
6. What is the usual fate of orally ingested enzyme supplements?
   a. digested by gastrointestinal proteases
   b. rapidly degraded by salivary secretions
   c. mostly absorbed in original form from stomach
   d. completely absorbed in original form from jejunum

7. What is the usual nitrogen balance state for healthy infants, children, and pregnant women?
   a. equilibrium
   b. metabolic
   c. positive
   d. negative

8. Which of the following food proteins is considered a high-quality protein?
   a. egg
   b. rice
   c. corn
   d. gelatin

9. If the diet is lacking an essential amino acid, what will be the course of action during protein synthesis?
   a. Body cells will synthesize it
   b. Protein synthesis will be limited
   c. Health will not be affected as long as other nutrients are adequate
   d. Proteins will be made but they will lack that particular amino acid

10. Which of the following describes an association between protein intake and kidney function?
    a. Low-protein diets increase the risk for kidney stone formation.
    b. Restricting protein intake may slow the progression of kidney disease.
    c. Excessive protein intakes greatly increases the risk for kidney disease.
    d. High protein intakes result in high urea production, which improves the efficiency of the kidneys.

11. Which two foods of the following foods provide complementary proteins?
    a. potatoes and broccoli
    b. beans and rice
    c. pasta and tomato sauce
    d. all of the above

12. What is a "limiting " amino acid?
    a. A nonessential amino acid present in high amounts which inhibits protein synthesis.
    b. An amino acid not found in foods nor made by the body.
    c. An essential amino acid which is in short supply for protein synthesis to take place.
    d. An amino acid that limits the absorption of other essential amino acids.

13. In the U.S., protein-energy malnutrition can be seen most often in which of the following populations?
    a. Cancer patients
    b. AIDS patients
    c. US children living in poverty
    d. all of the above

14. Cardiovascular disease, colon cancer, and breast cancer risks have been shown to increase with diets high in:
    a. protein.
    b. plant protein.
    c. animal protein.
    d. all of the above.

15. Which statement is true about vegetarian diets?
    a. All vegetarian diets are very low in fat.
    b. Each vegetarian meal must contain foods with complimentary proteins.
    c. Good plant substitutes for meat are legumes, whole grains, dark green leafy vegetables and seeds.
    d. Cheese and meat are nutritionally interchangeable.

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Six: Energy, Weight, Eating Disorders & Activity

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Selected pages from Chapter 7: Metabolism: Transformations and Interactions, pages 204-208, 222-229
- Discuss how photosynthesis is vital to human life.
- Define: metabolism, anabolism and catabolism.
- Describe the state of feasting and the use of excess protein, carbohydrates and fats.
- Describe the state of fasting and the use of excess protein, carbohydrates and fats.

Chapter 8 Energy Balance and Body Composition
- Define energy balance.
- Define appetite, hunger, satiation and satiety.
- Identify factors which influence hunger, satiation and satiety.
- Define basal metabolism. Identify factors that increase and decrease basal metabolism.
- List the factors used in calculating energy requirements.
- Define Body Mass Index. Calculate your BMI.
- Define visceral fat. Identify the waist measurement for women and men which indicates increased risk of chronic disease.
- List the health risks associated with excessive body fat.

Highlight 8 Eating Disorders
- Define disordered eating, anorexia nervosa, bulimia nervosa and binge-eating disorder.
- Briefly describe the treatment approach for eating disorders.

Chapter 9 Weight Management: Overweight, Obesity and Underweight
- Briefly describe fat cell development and metabolism to explain the Set-Point Theory of body weight.
- Identify genetic and environmental causes of obesity.
- Discuss successful weight-loss strategies. (Include physical activity, environmental factors and behavior modification concepts.)

Highlight 9 The Latest and Greatest Weight-Loss Diet--Again
- List several hallmarks of a fad diet.

Selected pages from Chapter 14 Fitness: Physical Activity, Nutrients and Body Adaptations, pages 457-472
- Define fitness.
- List several benefits of being fit.
- Discuss the guidelines for the three types of fitness: cardiorespiratory, strength and flexibility.
- Briefly discuss the use of energy (from carbohydrates, fats and protein) during activity.
Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, "news," or "press releases" or very brief articles.

Lesson Six Project: Activity (25 points)
Objective
Assess your activity level, calculate your calorie needs and discuss how to improve your activity level based on the Guidelines for Physical Fitness.

Materials Needed
- Lesson 6 Activity Form (found in the back of this guide)
- Lesson 6 Information Sheet: Cost of Activity Table (found in the back of this guide)
- the textbook

What to Submit
- completed Lesson Six Activity Form
- answers to the questions below

Instructions
Keep an Activity Log for 24 Hours and Compete the Activity Form

The first step for this project is to keep a 24 hour record of all of your activity. Record 24 hours of one day including sleep.

Use the Lesson 6 Activity Form to keep your record. Write down all activity, not just exercise--studying, watching TV, talking on the phone, driving, sleeping. Keeping this kind of record can be tedious. One approach is to note every ½ hour your activity for the last 30 minutes. Another approach is just to note the time at the start and the end of a new activity.

Keep a very careful record when you perform any type of exercise or a more intense activity. Even some activities like household chores, looking after busy children, some types of work (nurses aid, food service) are "exercise." Notes those times carefully.

Complete the Activity Log with the following information:
- start time and end time for all activities
- description of each activity
- conversion factor for each activity**
- your weight (in pounds, lbs)
- total minutes spent on each activity
- caloric cost of each activity
- TOTAL CALORIES for this 24 hour period

NOTE: Your basal metabolic rate (BMR) is built into the caloric cost of activities.

**See the Cost of Activity Table in the back of this guide to find conversion factors. These factors allow you to calculate how many calories you expended for each activity. Though many activities are listed on this table, obviously not all of the specific activities you perform in your day are listed. Do your best to consider how intense your activity is and find a matching type of activity. For example, playing with busy children, I would say, matches Circuit Training.
Questions

1. Briefly discuss your reaction to your results after completing the Activity Log. What new perceptions or insights do you have about your activity level? Your calorie needs?

2. Play the role of a fitness consultant (trainer) for the individual who kept this log. Advise him/her on how to improve fitness. Discuss all three types of fitness. Create a fitness plan for him/her and keep in mind lifestyle factors and current fitness level. Include in your answer a comparison of the activity level for this day to the Guidelines for Physical Fitness for each type of fitness. See pages 458 to 464 in your text. Be sure to describe the three types of fitness (cardiorespiratory, strength and flexibility) and state the details of the guidelines in your answer.

NOTE: Your day is just an example for this discussion. Ideally, a log of several days to weeks would be used to judge someone’s activity level is typically much more accurate. Don't worry if your record is not a typical day or if the log seems inaccurate in some way. The point is to discuss fitness principles using this day as an example.

I do understand that having little to no time is an obstacle to "exercise." Activity can either be exercise OR an activity that is naturally part of your day, like taking the stairs, walking or biking to work, intensive housekeeping, etc. Be CREATIVE!

Self-Quiz (5 points)

1. Which of the following cannot be used to make body proteins?
   a. Glucose
   b. Glycerol
   c. Fatty acids
   d. Amino acids

2. When energy-yielding nutrients are consumed in excess, which one(s) can lead to storage of fat?
   a. fat only
   b. carbohydrate only
   c. fat and carbohydrate only
   d. fat, carbohydrate, and protein

3. Which of the following is used to supply some of the fuel needed by the brain after the body has been fasting for a while?
   a. Ketones
   b. Glycerol
   c. Fatty acids
   d. Amino acids

4. What is the most satiating macronutrient?
   a. Fat
   b. Water
   c. Protein
   d. Carbohydrate

5. Which of the following factors has the most influence on the body's metabolic rate?
   a. age
   b. gender
   c. amount of fat tissue
   d. amount of lean body tissue

6. Which of the following is a feature of the body mass index?
   a. It correlates with disease risks.
   b. It decreases by 1 unit for every 10 years of life.
   c. It provides an estimate of the fat level of the body.
   d. It is defined as the person's height divided by the square of the weight.
7. All of the following are an association between type 2 diabetes and body fat except
   a. People with the disease often have central obesity rather than lower-body obesity.
   b. A woman who has gained 12 pounds since age 18 has doubled her risk of developing the disease.
   c. An obese person is 3 times more likely to develop the disease than is a non-obese individual.
   d. Overweight people with the disease who lose weight show no improvement in glucose tolerance nor insulin resistance.

8. What is the most common eating disorder in both males and females?
   a. Bulimia nervosa
   b. Anorexia nervosa
   c. Binge-eating disorder
   d. Athlete triad

9. All of the following describe the behavior of fat cells except
   a. the number decreases when fat is lost from the body.
   b. the size is larger in obese people than in normal-weight people.
   c. the storage capacity for fat depends on both cell number and cell size.
   d. the number increases significantly during growth years then tapers off when adult status is reached.

10. To help prevent body fat gain, the DRI suggests daily, moderately intense, physical activities totaling
    a. 20 minutes.
    b. 60 minutes.
    c. 1½ hours.
    d. 3 hours.

11. All of the following are sensible guidelines for weight reduction plans except
    a. consume low-fat foods regularly.
    b. eat rapidly to avoid prolonged contact with food.
    c. adjust energy intake downward as weight loss progresses.
    d. include vegetables, fruits, and grains as the mainstay of the diet.

12. Which of the following is a feature of the body’s response to engaging in physical activity?
    a. After an intense and vigorous workout, metabolism remains elevated for several hours.
    b. Body fat is more readily lost from the hips and thighs when engaging in vigorous exercises that work muscles in those areas.
    c. Glucose and amino acid levels in the blood are low after working out, but will recover on their own.
    d. After a workout, most people feel an urge to eat a carbohydrate-rich meal to replace glycogen stores.

13. All of the following are associations between the environment and food intake except
    a. distractions generally appear to reduce food intake.
    b. the greater the number of foods at a meal, the more likely people will overeat.
    c. the mere sight or smell of food prompts people to eat even if they are not hungry.
    d. small portions of food on large plates lead people to underestimate the amount of food eaten.

14. What is the predominant fuel used by muscle cells during low- or moderate-intensity activity?
    a. Fat
    b. Protein
    c. Glycogen
    a. Blood glucose

15. Which of the following is a mostly a “fat-burning” activity?
    a. brisk walking
    b. cycling
    c. cross country skiing
    d. all of the above

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Seven: Vitamins

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 10 The Water-Soluble Vitamins: B Vitamins and Vitamin C
- Define vitamin.
- Identify the general characteristics of vitamins.
- Define bioavailability and describe what factors determine the bioavailability of a vitamin.
- List the water-soluble vitamins.
- List the vitamins (in one letter!) which function as coenzymes. Describe what a coenzyme does.
- Describe the deficiency diseases, beriberi and pellagra. List several foods which prevent these deficiency diseases.
- Briefly describe how folate is vital to a healthy pregnancy, heart health and cancer prevention.
- Identify good food sources of folate.
- Describe the two situations that may lead to a B₁₂ deficiency.
- Identify good food sources of vitamin C. Describe the symptoms of scurvy to demonstrate the functions of vitamin C.

Chapter 11 The Fat-Soluble Vitamins: A, D, E and K
- List the fat-soluble vitamins and identify good food sources of each.
- Name the two forms of vitamin A.
- Describe how vitamin A relates to vision.
- Describe when D is a hormone and when it is a vitamin.
- Discuss vitamin D's role in healthy bones.
- Describe how much sunshine it takes to make adequate amounts of D.

Highlight 10 Vitamin and Mineral Supplements
- Identify arguments for and against the use of supplements.
- List some tips on selecting supplements.
- Briefly discuss supplement regulations.

Highlight 11 Antioxidant Nutrients in Disease Prevention
- Define free radical, antioxidant, oxidative stress and phytochemical.
- Discuss how free radicals are related to specific chronic diseases and conditions.
- Describe how antioxidants protect cells and tissues from free radical damage.
- List the nutrients which function as antioxidants.

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.

NO PROJECT FOR LESSON SEVEN
Self-Quiz (5 points)

1. What is meant by the bioavailability of a vitamin in food?
   a. The total amount available from a food.
   b. The amount absorbed and subsequently used by the body.
   c. The amount that remains after a food is processed
   d. The different chemical forms of the same vitamin.

2. Which of the following explains why B vitamin deficiencies lead to lack of energy?
   a. B vitamins are a source of kilocalories.
   b. Absorption of carbohydrates and fats is decreased.
   c. Oxygen for energy metabolism cannot be transported to the cells.
   d. Coenzymes needed for energy metabolism are produced in insufficient amounts.

3. Which of the following is NOT among the common signs of pellagra?
   a. Diarrhea
   b. Dementia
   c. Dermatitis
   d. Dehydration

4. Research has shown that the risk for neural tube defects is lowered by taking supplements of:
   a. niacin.
   b. folate.
   c. vitamin C.
   d. vitamin B12.

5. Which of the following is required for the absorption of dietary vitamin B12?
   a. Bile
   b. Lipase
   c. Intrinsic factor
   d. Carboxypeptidase

6. What is the most likely reason for the development of a vitamin B12 deficiency?
   a. Inadequate intake
   b. Increased excretion
   c. Inadequate absorption
   d. Increased losses in food preparation

7. What is a free radical?
   a. An inactive vitamin
   b. An unphosphorylated vitamin
   c. A molecule of unbound cobalamins
   d. A molecule with at least one unpaired electron

8. Which of the following is an early sign of vitamin C deficiency?
   a. Bleeding gums
   b. Pernicious anemia
   c. Appearance of a cold
   d. Hysteria and depression

9. John is looking to increase his dietary sources of vitamin C. However, he expresses a strong dislike for all citrus fruits. Which of the following shopping lists would you recommend?
   a. Liver, yogurt, milk
   b. Brussels sprouts, broccoli, strawberries
   c. Banana, peanut butter, canned tuna fish
   d. Whole grains, pork, fortified corn flakes
10. Which of the following food substances can be converted to vitamin A in the body?
   a. Tryptophan
   b. Chlorophyll
   c. Xanthophyll
   d. Beta-carotene

11. Which of the following is most likely to occur from a prolonged dietary deficiency of vitamin A?
   a. Osteomalacia
   b. Osteoporosis
   c. Xerophthalmia
   d. Prolonged blood-clotting time

12. A person seeking good sources of vitamin A would select all of the following except:
   a. liver.
   b. bananas.
   c. apricots.
   d. sweet potatoes.

13. A child with bowed legs is likely deficient in vitamin:
   a. A.
   b. K.
   c. E.
   d. D.

14. Which of the following is the most reliable source of vitamin D in the diet?
   a. Meat
   b. Fortified milk
   c. Fruits and vegetables
   d. Enriched breads and cereals

15. Which of the following are significant sources of vitamin E in the diet?
   a. Meats
   b. Citrus fruits
   c. Vegetable oils
   d. Milk and dairy product

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Eight: Minerals

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 12 Water and the Major Minerals
- Define electrolyte.
- Identify the major roles of water in the body.
- Describe how the body loses fluid and in what ways we intake fluids.
- Identify the recommended fluid intake (water and other beverages).
- For sodium and potassium, briefly list the consequences of consuming too little and too much.
- Define dehydration, heat stroke and water intoxication.
- Describe how bones grow and are maintained, briefly.
- List the roles of calcium, both in the blood and in bone.
- Describe vitamin D’s role in calcium absorption.

Chapter 13 The Trace Minerals
- Describe the symptoms of goiter. List good sources of the mineral that prevents goiter.
- Describe the causes and treatment of iron-deficiency anemia.
- Describe the symptoms and health problems associated with iron overload (known as hemochromatosis).
- List the factors that hinder iron absorption and those that promote iron absorption.

Highlight 12 Osteoporosis and Calcium
- Define osteoporosis.
- Discuss the risk factors for osteoporosis. List the people most likely to suffer from it.
- Describe several steps to prevent osteoporosis.

Highlight 13 Phytochemicals and Functional Foods
- Review the definition of phytochemical. List good food sources of many types of phytochemicals.
- Define functional foods.
- Identify some of the chronic diseases and conditions that may be prevented with phytochemicals.

Pages 618-620 Hypertension
- Define hypertension. Identify the cause of hypertension. (Trick question!)
- Describe steps to reduce (and prevent) hypertension.

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.
Lesson Eight Project: Vitamins & Minerals (25 points)

Objective
Explore your vitamin and mineral intakes.

Materials Needed
- Reports from your 5-day diet analysis (Lesson One Project):
  ✓ Intakes vs Goals
  ✓ MyPlate Analysis
  ✓ Daily Food Log
- Your previous diet projects (and feedback)

What to Submit
Your answers to the questions below.

Questions
1. List your average intakes of all ten (10) vitamins and six (6) minerals as a percentage of your DRI.

   NOTES: Use the RAE listing for vitamin A.
   Do not be concerned if the percentages for any vitamin or mineral are over 100% with the exception of sodium.
   For Sodium, the software lists a DRI (an Adequate Intake) of 1500 mg. However, another type of DRI exists for sodium an Tolerable Upper Level Intake of 2300 mg. For healthy young adults, you may use the DRI of 2300 mg.

2. For each vitamin and mineral, list three good sources of that nutrient. A good source is a food or beverage that supplies at least 10% of your DRI for that nutrient in a serving.

3. Discussion Question:
   For those vitamins and minerals you would like to improve your intake of, how can you improve the balance, nutrient density and variety of this diet to improve your intake of specific vitamins and minerals?
   Suggested answer length: 300 words.

Self-Quiz (5 points)

1. What organ provides the major control for homeostasis of body fluids?
   a. Liver
   b. Heart
   c. Kidneys
   d. Skeletal muscle

2. Which of the following are properties of electrolytes?
   a. they attract water.
   b. they are charged particles.
   c. they carry electrical current.
   d. all of the above

3. Salt-sensitive population groups include which all of the following?
   a. Caucasians.
   c. people with iron-deficiency anemia.
   d. all of the above.
4. All of the following are features of potassium in nutrition except
   a. processed foods are a major source.
   b. high intakes may protect against stroke.
   c. per serving size, legumes are a rich source.
   d. per serving size, bananas are a rich source.

5. Almost all (99%) of the calcium in the body is used to
   a. provide energy for cells.
   b. provide rigidity for the bones and teeth.
   c. regulate the transmission of nerve impulses.
   d. maintain the blood level of calcium within very narrow limits.

6. All of the following are known to enhance calcium absorption from the GI tract except
   a. lactose.
   b. oxalates.
   c. pregnancy.
   d. stomach acid.

7. Which of the following are good plant sources of calcium?
   a. spinach.
   b. almonds.
   c. corn tortillas.
   d. all of the above.

8. All of the following are known to have a high correlation with risk for osteoporosis except
   a. being thin.
   b. being female.
   c. having anorexia nervosa.
   d. consuming a high-protein diet.

9. Which of the following is a characteristic of iron absorption?
   a. MPF in plant foods enhances overall iron absorption
   b. Ferritin in red meat interferes with ferrous iron absorption
   c. Absorption of heme iron is about 50% higher than nonheme iron
   d. all of the above

10. Which of the following population groups is least susceptible to iron-deficiency anemia?
     a. Older infants
     b. Children 2-10 years of age
     c. Women of childbearing age
     d. Men 20-45 years of age

11. Iron overload is also known as:
    a. ferrocyanosis.
    b. hemoglobinemia.
    c. hemochromatosis.
    d. metalloferrothionosis.

12. Which of the following is the most effective and least costly strategy for preventing an iron deficiency?
    a. Consume iron supplements at a level 2 to 3 times the RDA.
    b. Switch to iron cooking utensils and eat four or more servings of red meat daily.
    c. Eat small amounts of citrus products and increase intake of low-fat milk.
    d. Eat small portions of meat, fish, and poultry routinely with liberal portions of vegetables and legumes.
13. Which of the following is an example of a *functional food*?
   a. calcium-fortified orange juice
   b. salmon
   c. enriched grains
   d. all of the above

14. Risk factors that predict the development of hypertension include all of the following except
   a. age.
   b. race.
   c. salt intake.
   d. family background.

15. Which of the following is not among the recommendations by health professionals to treat hypertension?
   a. increase fiber intake
   b. eat foods high in potassium
   c. if overweight, reduce weight
   d. decrease intake of dairy products to avoid sodium

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Nine: Lifecycle Nutrition

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 15 Lifecycle Nutrition: Pregnancy and Lactation
• Identify the reasons why a nutritious diet (and healthy lifestyle) is important to pregnancy prior to conception.
• Define the critical period during pregnancy.
• Define neural tube defects (NTD) and identify the vitamin which reduces the risk of NTD.
• State the recommended weight gain during pregnancy, that is, the gain during the first trimester; and the gain during the second and third trimesters (for women at a healthy weight).
• Discuss the overall nutrient needs of pregnancy, including calorie needs.
• Define pica.
• Define low birthweight (LBW) in infants.
• Discuss the WIC Program.
• Define gestational diabetes and pre-eclampsia.
• List some practices to avoid or to limit during pregnancy.

Selected pages from Highlights 15 Fetal Alcohol Syndrome
• Define Fetal Alcohol Syndrome, describe the cause and some of the symptoms.
• Discuss the recommendations regarding alcohol use during pregnancy.

Selected pages from Chapter 16 Lifecycle Nutrition: Infancy, Childhood and Adolescence (pages 521 - 559)
• Compare and contrast breastmilk and infant formula.
• Identify the recommended foods for a 0 to 4 month old and those for a 4 to 6 month old.
• Discuss why these foods (in the answer above) are important to an infant’s health.
• Identify foods to avoid feeding to an infant during the first year.
• Compare a toddler’s (1 to 3 year old) nutrient needs to an infant’s (under 1 yr).
• Identify the eight foods most likely to cause allergies.

Highlight 16 Childhood Obesity and the Early Development of Chronic Diseases
• Describe the health consequences of the onset of obesity in childhood.
• List several strategies to prevent childhood obesity.

Chapter 17 Lifecycle Nutrition: Adulthood and Later Years
• Discuss the unique nutrition needs of seniors (specifically energy, protein, fiber, B12, calcium and iron) and describe why aging results in these changing needs.

Highlight 7 Alcohol and Nutrition
• Give examples of what equals "one drink."
• Describe how alcohol affects the body, overall, and the brain and liver, specifically.
• Discuss why the recommended maximum "dose" of alcohol for women is lower than the one for men.
• Describe the metabolism of alcohol.
• List several factors which affect alcohol absorption and, as a result, blood alcohol levels.
• Identify the health problems which result from chronic alcohol abuse.
Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.

NO PROJECT FOR LESSON NINE

Self-Quiz (5 points)

1. Which of the following nutrients taken as a prenatal supplement has been found to be associated with a lower incidence of neural tube defects?
   a. Iron
   b. Folate
   c. Calcium
   d. Cobalamin

2. What is the most reliable indicator of an infant’s future health status?
   a. Infant’s birthweight
   b. Mother’s weight before pregnancy
   c. Mother’s weight gain during pregnancy
   d. Mother’s nutrition status prior to pregnancy

3. Of the following nutrient needs, which is considered the most difficult to meet during pregnancy, often because of low body stores?
   a. Iron
   b. Protein
   c. Vitamin D
   d. Vitamin B6

4. Jane is visiting with her doctor during her 2nd trimester of pregnancy and has just revealed her strange cravings. The doctor diagnosed that Jane is experiencing *pica*, which is causing her intense craving for:
   a. dirt.
   b. garlic.
   c. pickles.
   d. pepperoni.

5. What is the name of the condition characterized by high blood pressure, edema, and protein in the urine of a pregnant woman?
   a. Preeclampsia
   b. Gestational diabetes
   c. Teratogenic hypertension
   d. Pregnancy-induced blood pressure crisis

6. Which of the following recommendations for pregnant women regarding alcohol intake was issued by the U.S. Surgeon General?
   a. Drink absolutely no alcohol
   b. Refrain from drinking hard liquor only
   c. Consume no more than 2 drinks per day
   d. Drink only small amounts of alcohol (1/2 drink) during the first 3 months but none thereafter

7. Of the following cereals, which is most likely to result in an allergic reaction upon first feeding?
   a. Oat
   b. Rice
   c. Corn
   d. Wheat
8. According to the American Academy of Pediatrics breastfeeding of full-term infants is:
   a. optional.
   b. mildly recommended.
   c. moderately recommended.
   d. strongly recommended.

9. What is colostrum?
   a. A clot in the bloodstream
   b. A major protein in breast milk
   c. A hormone that promotes milk production
   d. A milk-like substance secreted right after delivery

10. Breast milk as the sole source of nutrition, up to the first 6 months in healthy infants, is satisfactory for all
    nutrients except:
    a. sodium.
    b. vitamin D.
    c. iron and folate.
    d. zinc and vitamin A.

11. Which of the following nutrients need to be supplied first by solid foods in a baby’s diet?
    a. Vitamin C and iron
    b. Vitamin A and zinc
    c. Vitamin B12 and fluoride
    d. Vitamin E and magnesium

12. Which of the following is the primary factor in the development of milk anemia?
    a. Impaired absorption of iron
    b. Excessive intake of cow’s milk
    c. Low iron content of breast milk
    d. Insufficient intake of whole cow’s milk

13. Vitamin B12 deficiency in the elderly is least likely to occur from:
    a. intestinal bacterial overgrowth.
    b. insufficient intake of vitamin B12.
    c. reduced output of intrinsic factor.
    d. reduced output of hydrochloric acid.

14. Drink for drink, women will experience higher blood alcohol levels than men because:
    a. women absorb alcohol much faster than men.
    b. women typically have more body fat which slows the metabolism of alcohol.
    c. women have less of an enzyme that breaks down alcohol.
    d. women’s brains are less tolerant to alcohol.

15. Which of the following is considered one drink of alcohol?
    a. one glass of wine, about 8 oz
    b. a pint (16 oz) of beer, American-style type
    c. one shot of whiskey, 1 ½ oz, 80 proof
    d. all of the above

Questions? Email your instructor, Deborah Ocken, at deborah.ocken@seattlecolleges.edu
Lesson Ten: Consumer, Global & Environmental Nutrition

Reading Assignment & Lesson Objectives
Answer the following questions in your own words while reading the assigned chapters in the textbook. (Your answers will NOT be submitted.)

Chapter 19 Consumer Concerns about Food and Water
- Briefly describe the causes of food-borne illness.
- List several foods most commonly associated with food-borne illness.
- Identify ways to prevent food poisoning.
- Discuss reasons some foods may be irradiated; list the foods approved for irradiation.
- Discuss the problems with pesticides and how to minimize exposure to pesticides.
- Define organic as a term used to describe foods.
- Describe regulations governing food additives.
- Describe the food preservatives added to food to prevent spoilage.

Highlight 19 Food Biotechnology
- Discuss the controversy surrounding growth hormones used in agriculture. Define genetic modification.
- Briefly list several arguments for and against genetically modified organisms in the food supply.

Chapter 20 Hunger and Global Environment
- Briefly describe the problem of hunger (in the US and globally) and identify the causes.
- Define food insecurity.
- Discuss the relationship between the environment and hunger.

Highlight 20 Environmentally-Friendly Food Choices
- List the ways US consumers can make wise food choices in order to reduce our ecological footprint.

Article Summary (20 points)
See page 4 of this guide for instructions about this assignment.
Reminder: Avoid sources that are not credible, “news,” or “press releases” or very brief articles.

Lesson Ten Project: Your Ideal Diet (25 points)

Objective
Create a ONE-Day Ideal Diet: a diet that meets your recommendations for all of the nutrients you have studied in the previous diet analysis projects.

Materials Needed
- diet analysis software
- previous projects
- your textbook
What to Submit
Your Custom Report of your One-Day Ideal diet. You will either submit your report as a PDF attached to an email message OR a print-out of your custom report with your other lesson assignments to the Distance Learning Office. See Step 3 in the instructions for Lesson One Project. The only change is that your start date and your end date for this report are the same!

Instructions
For this project you will create a one day, ideal diet. Create a diet that is adequate. Your ideal diet will meet your recommendations for:
- Calories (You will determine your calorie needs based on previous projects and your educated insights.)
- Fiber
- Total Fat
- Saturated Fat
- Protein
- Vitamins & Minerals

In addition, apply the diet-planning principles to your ideal diet:
- **Balance.** Your diet meets (or comes to meeting) your recommended servings for each Pyramid Food Group.**
  **Small portions of plant choices equal a serving in the Protein Group. As a result you may find your total servings easily exceeds your recommended servings. If that is the case AND your choices are mainly from plants, do NOT be concerned!
- **Nutrient Density.** Most of the items your diet are higher in nutrient density
- **Variety.** WITHIN the Grain, Vegetable and Protein Groups, your diet provides many different choices.

TIP: One approach to creating an ideal diet is to start with the recommended number of servings for each Food Group. Select a variety of nutrient dense foods that meet your serving recommendations and see how close to an ideal diet you can get with this approach. Another approach is to use one of your previously analyzed days from your Lesson One Project that is close to ideal and edit the choices for that day.

CAUTION: Do not use supplements or supplemental foods. Avoid pills, fortified drinks and bars and breakfast cereals that are heavily fortified, like Total. The challenge is to find food sources that give you everything you need. Review the Lesson One Project instructions about avoiding Brand-Named entries.

NOTES:
- ✓ Your intakes of vitamins and minerals should be at least 100% of your DRI (except sodium). Going over 100% is OKAY.
- ✓ Eating more than the recommended amount of fiber is also okay, also, especially if your the diet is balanced or close to being balanced.
- ✓ Many ideal diets exceed 200% of the DRI for protein. If yours does, don't be concerned IF you have at least some plant choices from the Protein Group and your diet meets the total fat, saturated fat and fiber recommendations.
Self-Quiz (5 points)

1. The most common symptoms of foodborne illness include all of the following except:
   a. fever.
   b. cramps.
   c. diarrhea.
   d. double vision.

2. Which of the following is TRUE concerning the safe storage of leftovers?
   a. Leftovers should be stored at a depth of no greater than two inches.
   b. Leftovers should be refrigerated within two hours of serving.
   c. Leftovers should only be refrigerated for up to four days.
   d. All of the above are true.

3. A few years ago a foodborne illness outbreak was reported by a national restaurant chain. After dozens of people were infected, authorities determined that employees of the restaurant had used the same knife to cut raw meat products as they did for produce items such as lettuce. Which of the following terms most likely describes the employees' neglect that led to the patrons of the restaurant becoming ill?
   a. Contamination
   b. Cross-contamination
   c. Hazard Analysis Critical Control Points
   d. Inappropriate monitoring of food temperatures

4. Which of the following is a benefit of irradiating food?
   a. higher iron absorption
   b. destruction of bacteria and insects
   c. lower calorie content
   d. protein quality improved

5. Common foods approved for irradiation include all of the following except:
   a. eggs.
   b. milk.
   c. wheat.
   d. strawberries.

6. What are the two most common preservatives or antimicrobial agents used in our food?
   a. BHA and BHT
   b. nitrates and sulfites
   c. salt and sugar
   d. vitamin E and vitamin C

7. All of the following practices are known to minimize exposure to food pesticide residues except:
   a. throwing away the outer leaves of leafy vegetables.
   b. using a knife to peel citrus fruits rather than biting into the peel.
   c. throwing away the fats and oils in broths and pan drippings from cooked meats.
   d. washing waxed fruits and vegetables in water to remove the wax-impregnated pesticides.

8. Food producers are allowed to label a food product as organic if it:
   a. has been fortified with B vitamins
   b. contains only natural ingredients.
   c. was made with at least 95% organic ingredients.
   d. if the product complies with USDA organic standards and is higher in vitamins and minerals than conventionally-grown products
9. The largest group of food additives are:
   a. emulsifiers.
   b. preservatives.
   c. flavor enhancers.
   d. bleaching agents.

10. What list is composed of substances widely used for many years without apparent ill effects?
   a. FDA
   b. GRAS
   c. Delaney
   d. Additive Safety

11. Limited or doubtful availability of nutritionally adequate and safe foods is the definition for food:
   a. insecurity.
   b. insufficiency.
   c. vulnerability.
   d. precarioussness.

12. What is the primary cause of hunger in the U.S.?
   a. lack of nutritional knowledge
   b. shortage of food in some areas
   c. drug abuse
   d. poverty

13. Global trends that may threaten the food supply include:
   a. population growth
   b. water pollution and misuse
   c. decreasing biodiversity
   d. all of the above

14. Which of the following is a feature of U.S. agriculture practices?
   a. They promote protection of soil and water
   b. They frequently lead to higher crop prices
   c. They are designed to benefit mostly small family farms
   d. They tend to support the use of pesticides and fertilizers

15. When comparing the fuel required to produce a lacto-ovo-vegetarian to a omnivore diet (animal** and plant food), the omnivore diet requires:
   a. just slight more fuel
   b. about one and a half times (50%) more fuel
   c. almost twice as much fuel
   d. ten times more fuel

**grain-fed animal foods; NOT open range or wild animals

At this time, you have completed all assignments necessary to take the Final Exam. You must request an examination using the Examination Request Form. Thoroughly review the instructions on the form prior to requesting the examinations. Please see your Student Handbook for testing times.