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Prerequisites: PBIO 185/187 (biochemistry) or equivalent

Course Description:

This summer class is intended only for students who are absolutely unable to take the regularly scheduled spring semester class. This summer version is offered as a completely online course. Students are expected to view all of the podcasts of the spring semester class and other online video lessons, in the order presented in the “Course Materials” folder of the Blackboard course site. Students are also required to complete all 5 online quizzes and take a midterm and final exam.

Course Objectives:

After successfully completing this course, students will have a good understanding of the chemistry and biochemistry of the various macro and micronutrients, and their roles and functions in the prevention of disease and the maintenance of optimal health. In addition, students will have a broad understanding of selected research tools used in basic and applied nutritional sciences research.

Textbook: Not required but on reserve in Bailey/Howe Library:

*Advanced Nutrition and Human Metabolism, 6th Edition*  
By Sareen S. Gropper and Jack L. Smith

Grading:  
Online Quizzes 20%  
Midterm Exam 40%  
Final Exam 40%
**Course Schedule:**

The summer course podcasts will be available for viewing from May 23rd to July 15th. The midterm exam will be scheduled for Thursday or Friday, June 16th or 17th. The final exam will be scheduled for Friday, July 15th (last day of the class).

To help you gauge your pace through the video lecture podcasts, online video lessons, and quizzes, view the order of topics below. As you can see, you should be through the “Advanced Glycation End-Products” (Lesson #13) podcasts by no later than the week of June 13th (3-4 weeks into the course).

Although the final exam is “not cumulative,” there will certainly be topics covered on the final exam that were also covered in the first half of the course. For example, the first half of the course includes discussion of the various mechanisms of enzyme regulation. During the second half of the course, we will be examining various examples of these mechanisms of enzyme regulation. So you should be prepared to answer exam questions related to this topic on both the midterm and final exams.

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**Course Schedule of Topics, Quizzes, and Exams**

Lesson #1 – The Structure of the Cell (22 minutes)

Lesson #2 – The Cell Membrane (15 minutes)

Lesson #3 – Cell Signaling Mechanisms (88 minutes)

Lesson #4 – Biological Energy (77 minutes)

Lesson #5 – Digestion (46 minutes)

**Online Quiz #1**

Lesson #6 – GERD (65 minutes)

Lesson #7 – Weight Loss Surgery (34 minutes)

Lesson #8 – Protein Quality Assays (22 minutes)

Lesson #9 – Proteins (122 minutes)
Online Quiz #2

Lesson #10 – Carbohydrates (50 minutes)
Lesson #11 – Carbohydrate Metabolism (27 minutes)
Lesson #12 – Carbohydrate Metabolism: Regulation of PFK-1 (31 minutes)
Lesson #13 – Advanced Glycation End-Products (58 minutes)

Mid-Term Exam – June 16th or 17th

Lesson #14 – High Fructose Corn Syrup (185 minutes)
Lesson #15 – Lipids: Introduction (71 minutes)

Online Quiz #3

Lesson #16 – Lipids: Cholesterol (40 minutes)
Lesson #17 – Lipids: Lipoproteins (72 minutes)
Lesson #18 – Free Radicals and Antioxidants (84 minutes)
Lesson #19 – Atherosclerosis (57 minutes)

Online Quiz #4

Lesson #20 – Omega-3 Fatty Acids and Fish Oil (76 minutes)
Lesson #21 – Other Aspects of Lipid Metabolism and Regulation (63 minutes)
Lesson #22 – Obesity, Type II Diabetes, and Inflammation (119 minutes)
Lesson #23 – Metabolism of Toxins (27 minutes)

Online Quiz #5

Lesson #24 – Diet and Cancer (100 minutes)
Lesson #25 – Regulation of Dietary Supplements (71 minutes)

Final Exam – Friday, July 15th.
Exams:

This summer you will have the option of taking your exams online using and online exam proctoring. **Taking the exams online is not mandatory. If you are near UVM and prefer, you can take the exams in person on campus.** The proctoring service that we will be using is "ProctorU." Here is a link to UVM's portal to the ProctorU service.

https://www.proctoru.com/portal/uvm

If you elect to take the exams online using ProctorU, you will need to pay $25 per exam for use of the service (total of $50 for both the midterm and final exams). You can pay for this with a credit card at the time of the exam.

If you intend to use ProctorU, you will need to create an account before being allowed to take the exams. I would suggest that you create your account as soon as possible, so that you are ready when the exam time arrives. Just go to the “Sign Up” link at the top of the UVM portal page to ProctorU (using the link above). This link also has some very helpful video tutorials on how the proctoring service works and what to expect when you take your exams using this service.

A few important things to know about this online proctoring service.

1. You will need to take the exams on a computer that is equipped with a webcam and microphone.
2. You will need to take the exams in a room without anyone else present.

Other requirements for the online proctoring are explained in the video tutorials. **Again, you may choose to take the exams in person at UVM, if you prefer.**

Sometime shortly before the exam dates, you will need to login to your ProctorU account and make an "appointment" to take the exam within the date/time options listed. Then just login to your account on that date and time to take the exam. Once you begin the exam, you will have 90 minutes to complete it. The exams are closed book and closed notes. I will be posting on Blackboard a study guide to the exams about one week before the exam dates. I will also post on Blackboard an old Advanced Nutrition exam, to give you an idea of the style and format of the exam.