# INTERMEDIATE NUTRITION AND METABOLISM
## (CELLULAR AND MOLECULAR NUTRITION)
## NTR 326, Unique #85170
## Summer 2020

**Office Hours: M, W 12 – 1 pm or by appointment**

**Dr. Christopher Jolly**
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**MTWThF 1:00 – 2:30 pm**
**Classroom: zoom online**

**Discussion Sections:** 3-4 pm TTh – zoom online

Note: All lectures will be recorded on zoom. Due to the current pandemic, attending lectures during lecture time is not mandatory. No attendance will be taken.

**COURSE OBJECTIVES**:

A. Develop an appreciation for the importance of cell biology, biochemistry and molecular biology in nutrient uptake and metabolism.
B. Understand the basic concepts and importance of metabolic regulation at the whole body, organ and cellular level.
C. Gain an understanding of how nutrients work alone and together to regulate physiological function.
D. Gain an appreciation for the roles of various organs (liver, muscle, adipose tissue) in macronutrient metabolism.
E. Develop the critical thinking required to apply alterations in metabolism to cell function and disease process.
F. Start to build problem solving skills to determine mechanisms for physiologic changes and uses in macronutrient metabolism in disease states.
G. Build upon the metabolism learned in NTR 312 to prepare the students for NTR 342.

1. Prerequisites for NTR 326

   **Credit* in NTR 312 or 312H for Nutrition majors.**
   Nutrition 312 with a grade of at least C in each.

2. Students with disabilities.

   Please notify me of any modification/adaptation you may require to accommodate a disability-related need. You will be requested to provide documentation to the Dean of Students' Office, in order that the most appropriate accommodations can be determined. Specialized services are available on campus through Services for Students with Disabilities. For more information, contact the Office of the Dean of Students at 471-6259 or 471-4641, https://www.utexas.edu/diversity/ddce/ssd/.

**Grade Determination**

100% 5 Exams (4 Exams count) (25% for each exam)

**<u>NOTE</u>: THE LOWEST OF ALL 5 EXAMS MAY BE DROPPED**

Grade Reporting

Grades will be reported as:

| | |
|---|---|
| 90-100 | A |
| 80-89 | B |
| 70-79 | C |
| 60-69 | D |
| < 61 | F |

3. Exams:

- **ALL LECTURES WILL BE RECORDED ON ZOOM.**
- **LECTURE MATERIAL WILL SERVE AS EXAM QUESTIONS**.
- If figures/tables from other books are used, then only the information presented in class will be used for exams.
- **THERE WILL BE NO MAKE-UP EXAMS**. If an exam is missed, then that is your dropped exam grade.
- The material covered will be all the lecture material since the last exam.
- Pay special attention to things that are highlighted or asterisked by me in lectures. These items are more likely to be test questions.
- All exams are multiple choice, open book, online.
- Exam times are every Monday during class time.
- Questions regarding exam grading should be made, in writing, to the instructor (Dr. Jolly). For exam re-evaluation this must occur by the second class day following the return of the exam.

4. Texts:

- **MANDATORY TEXT**: Advanced Nutrition and Human Metabolism, sixth Edition, Gropper/Smith/Groff, Thompson-Wadsworth, 2017. Reading assignments for this textbook are given in the course outline.
- The lecture material is derived from a mixture of cell biology, biochemistry and nutrition textbooks.

5. Lecture Notes

- ✓ Handouts will be posted on Canvas.
- ✓ Handouts serve as an outline of the key content of the class and supply many of the diagrams/figures that we will discuss.
- ✓ All lectures are recorded on zoom.

6. Discussion sections:

   - No new material will be presented.
   - Ashley Neely (the TA) leads the sections and will reinforce the lecture material.
   - This is your time to gain clarification on lecture material.
   - Bring your questions!

**Policy on Academic Integrity:**

Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and / or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on academic dishonesty will be strictly enforced. For further information, please visit the Student Conduct and Academic Integrity website at: http://deanofstudents.utexas.edu/conduct.

Class recordings are reserved only for students [instructor and TA(s)] in this class for educational purposes. The recordings should not be shared outside the class in any form. Violation of this restriction could lead to Student Misconduct proceedings.

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| Date | Day | Topic | Description |
|---|---|---|---|
| July 13 | M | Syllabus / Intro. | Course overview/Introduction |
| July 14 | T | Human physiology | Digestion anatomy, Chapter 1,2 |
| July 15 | W | Cell structure 1/2 | Organelles and their function/structure, Chapter 1 |
| July 16 | Th | How cells respond 1 | Receptors and signal transduction |
| July 17 | F | How cells respond 2 | DNA nucleotide metabolism (Gene expression) and protein synthesis, intro to metabolism Chapter 1 |
| | | | |
| July 20 | M | **EXAM I** | |
| July 21 | T | Enzyme kinetics<br>Cell transport | Regulating enzyme activity<br>Transport into and through cells, Chapter 1 |
| July 22 | W | Carbohydrates | Glucose, starch, fiber, glycogen structure, Chapters 3,4 |
| July 23 | Th | Carbohydrates | Digestion/absorption, Chapters 3,4 |
| July 24 | F | Carbohydrates | Carbohydrate Metabolism, Chapter 3,4 |
| | | | |
| July 27 | M | **EXAM II** | |
| July 38 | T | Protein | Amino acid and protein structure, Chapter 6 |
| July 29 | W | Protein | Digestion/absorption, Chapter 6 |
| July 30 | Th | Protein | Protein/Amino Acid Metabolism, Chapter 6 |
| July 31 | F | Protein | Amino Acid Metabolism, Chapter 6 |
| | | | |
| Aug 3 | M | **EXAM III** | |
| Aug 4 | T | Lipids | Digestion/absorption, Chapter 5 |
| Aug 5 | W | Lipids | Lipoproteins, Chapter 5 |
| Aug 6 | Th | Lipids | Lipid Metabolism, Chapter 5 |
| Aug 7 | F | Lipids | Metabolism, Chapter 5 |
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| Aug 10 | M | **EXAM IV** | |
| Aug 11 | T | Water Soluble Vitamins | Regulating metabolism, Chapter 9 |
| Aug 12 | W | Fat Soluble Vitamins | Vitamin A, Chapter 10<br>Vitamin E/Antioxidants, Chapter 10 |
| Aug 13 | Th | Fat Soluble Vitamins | Vitamin D/Calcium, Chapters 10, 11 |
| Aug 14 | F | **EXAM V** | |
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**NO FINAL EXAM: Exam V counts in its place.**