

**NTR 365 – Nutritional Biochemistry: Busting Nutrition Myths**  
**Unique Number: 52199**  
**Fall 2020 – Course Syllabus**

### Course Description

This course will provide an overview of the science of nutrition. Topics covered include components of food (macro- and micronutrients), digestion and absorption, energy metabolism, energy balance, and the role of nutrition in the growing epidemics of obesity and chronic illnesses. While the terms "nutrigenomics" and "nutrigenetics" are fairly recent, it has been known for decades that nutritional intake can modify the effect of genes. In this course, we will also cover basic gene structure and function, how traits are inherited, how genetic variation influences dietary intake, and how dietary intake, in turn, influences gene function. This course is designed to coalesce knowledge of nutritional biochemistry and metabolism and provide a framework for interpreting physiological outcomes in the context of gene-diet interactions.

### Course Learning Objectives

1. Understand how the human body extracts and utilizes nutrients from foods for growth and maintenance of health.
2. Analyze patterns of dietary intake and determine how quantity, quality, and timing of meals influences energy balance and adiposity.
3. Evaluate whether and how information about genes, metabolites, proteins, and other "omics" measures, along with phenotypes and environments, can be used to create a personalized nutrition plan.
4. Apply knowledge of metabolism and nutritional biochemistry to interpreting the validity of nutrition information.

### Course Professor/TA and Contacts

Below is a contact list for your professor, TA, and support resources:

COURSE TEAM	EMAIL ADDRESSES*	ADDRESS	OFFICE HOURS
<b>Professor/TA</b>			
Molly Bray, PhD	mbray@austin.utexas.edu	Gearing Hall, Room 313C	Thursdays: 11:00-12:00 pm or by appointment via Zoom
Jennifer Chiou	jennifer.chiou@utexas.edu	Dell Pediatric Research Institute	Mondays: 9:00-10:00 am or by appointment via Zoom
Jeiting Wang	wjt1992@utexas.edu	Bellmont Hall, 820	Wednesday: 10:00-12:00 by appointment via Zoom
<b>Tech Support</b>			
Canvas Support	<a href="https://community.canvaslms.com/community/help">https://community.canvaslms.com/community/help</a>		

\*Email should be used sparingly and appropriately for correspondence with your professor and/or TA. Office hours are for discussing grades, course content, etc. Should you have questions or need help regarding any course material outside of class, office hours or a separate appointment are the appropriate platforms for these discussions. Emails and Canvas messages should be professional and appropriate. **The professor and TA will not answer questions concerning the content of an exam or a grade by e-mail.**

### Course Format

This course will be taught online through Zoom and Canvas. There will be three units, each with four modules, for a total of 12 modules over the course of the semester, as outlined below:

- Unit 1 – Basic Nutritional Biochemistry and Metabolism
- Unit 2 – Energy Balance and Obesity
- Unit 3 – Nutrigenomics and Nutrigenetics

See the course schedule for more details. When you log into Canvas, you will arrive at your Canvas dashboard. Select the relevant course module to access the course materials. You can use the advance buttons on the bottom of each page to access the materials in the course, and you can also access the course menu on the left side of your screen to navigate within the course. Please make sure to read the brief descriptions on each page that help guide you through the content.

### Course Materials

- Required textbook:
  - Gropper and Smith, *Advanced Nutrition and Human Metabolism*, Cengage, 2018.
  - The e-book format of this text is relatively inexpensive, searchable, and contains additional materials for learning. Unless you intend to pursue additional nutrition or biochemistry courses, do not buy the hard cover version of this book.
- Optional textbooks:
  - The Gene: An Intimate History by Siddhartha Mukherjee
  - Kohlmeier, *Nutrigenetics: Applying the Science of Personal Nutrition*, Elsevier, 2013.
- Additional assigned readings and articles will be posted on Canvas.

### Technology Requirements

- Access to high-speed internet
- Basic computer skills
- Ability to communicate via Internet tools such as chat, email
- Computer with speakers or headphones
- Supported web browser: Internet Explorer, Firefox, Safari, or Chrome

### Course Activities

Below are the activities and assessments you will encounter as you work your way through the course.

- **Synchronous Online Class Activities:** Interactive lectures will be given via Zoom on scheduled class days; students who attend class and office hours regularly will perform well in this course. All synchronous lectures will be recorded.
- **Read/Watch/Explore:** Didactic content activities in which you interact with key concepts presented in textbook readings, engaging video, and web-based formats
- **Check for Understanding (CFU, 100 points total):** CFUs are short quizzes within modules generated to help you to gauge your understanding of the content covered.
- **Module Discussion Board Blogs (25 points/module):** Each week, a new module will open, along with a discussion board topic related to a nutrition myth or provocative question in nutrition. You may also be given specific materials to read and/or watch for these discussions. You will write a short paragraph on the topic or question (400-600 words) in the form of a blog and comment on at least one other student's entry. Topics will be discussed in class on Thursdays.
- **Unit Exams (100 points/exam):** The course is structured in three units, each covering the main learning objectives of the course. Unit exams will be online, timed exams that will utilize a series of case studies to assess students' understanding of key concepts in nutritional biochemistry, metabolism, and nutrigenetics.
  - Exams will be available from 12:01 am to 11:59 pm on their scheduled day.
  - Unit exams take place on Fridays, and you will be reminded of an upcoming exam on Thursday in class.
  - You will be allowed **ONE** 60-minute attempt at each exam.

- You may use a non-programmable calculator but no other written or electronic resources are allowed.
- You are expected to work alone on the exams.
- No make-up or early exams will be offered.
- Exam responses may be reviewed via Zoom with the professor or TA during office hours or by appointment for **ONE WEEK ONLY** following the close of the quiz.
- Exams may not be preserved in any way; multiple windows are not allowed. See *academic honesty* section for penalties should this policy be broken.
- **Final Group Project (300 points):** Working in groups, students will have their choice of several different types of “Myth Buster” projects, as described below:
  - Evaluation of a popular diet book
  - Evaluation of a gene-based diet company
  - Evaluation of a dietary supplement

It is important to start early on this project, to provide time for the full evaluation. Be sure to choose a diet or supplement for which there is sufficient information to complete the requirements below – stating that information was not available is not acceptable. More information about the specific contents of each type of group project will be provided. Every member of the group should contribute to the project. For each type of project, the student groups will prepare the following materials:

  - Infographic describing the diet or supplement
  - Short video (2-5 minutes) describing the physiologic/metabolic premise of the diet or supplement
  - A literature review of the science behind the diet or supplement (5-10 pages describing at least four scientific studies)
  - A presentation of the pros and cons of the diet or supplement to the class; this can be in the form of a PowerPoint presentation or a formal debate, with supporting written materials. Each group will present their findings during the last week of class via Zoom.
  - Final written recommendation (1-2 pages) – outline the final recommendation of the group regarding the diet or supplement, with an explanation of why you would or would not recommend the diet or supplement.
  - Self-evaluation – provide an evaluation of your contribution to the project
  - Peer-evaluation – provide an evaluation of the contribution of others in your group to the project
- **Case Studies and Other Extra Credit Exercises:** Each week, you’ll be presented with a case study that will help you apply the knowledge you are acquiring to a real-life setting. Unit exams will be given in the context of case studies, so this practice will help you to be successful on the timed unit exams. Case study quizzes will count as extra credit. Additional extra credit assignments will be given periodically throughout the semester. Completed extra credit activities must be entered and/or uploaded to Canvas for grading.
  - Upload all completed extra credit materials to Canvas by 11:59 pm on the due date.
  - Instructions for the extra credit activities are posted on Canvas.
  - Points for the extra credit activities will be posted on Canvas.
  - You have 1 week from the time you receive your extra credit grade to communicate your concern to the teaching assistant.
  - **Late submittals of extra credit activities will not be accepted.**

### Grading Policy

Your semester grade will be based on a combination of your completion of discussion boards and CFU quizzes, your performance on each of the unit exams, and on the final group project, as outlined below. Final grades will be based on the following point distribution, out of a possible 1000. ***Thus, you need 900 or more points to make an “A” in this course.***

Required Assignments	Frequency	Course Grade
Check for Understanding	1/module	100 pts (10%)
Discussions (25 points)	1/module	300 pts (30%)
Exams (100 points each)	1/module	300 pts (30%)
Final group project	1	300 pts (30%)
<b>Total</b>		<b>1000 pts (100%)</b>

**Grade scale:**

- A = 900 - 1000 pts
- B = 800 - 899 pts
- C = 700 - 799 pts
- D = 600 - 699 pts
- F = <600 pts

**Course Schedule**

All dates and times are in Central Daylight Time (CDT). Unit exams open on Fridays at 12:01 AM and remain open until 11:59 PM that same day. You will have 60 minutes to complete each unit exam. Discussion board blog questions open at 12:01 AM every Sunday and close on Wednesday at 11:59 PM. All types of assignments must be completed by the due dates.

**NTR 365 Tentative Schedule**

	Date	Topics Covered	Assignments/Exams
	Aug. 27	Introduction/ Course Overview Ethics	Syllabus Quiz "Getting to Know You" Extra Credit
<b>Unit 1</b> <b>Basic Nutrition</b>	Aug. 30 – Sept 5	Digestion and Absorption	Discussion Board 1 (Due Sept. 2)
	Sept. 6 – 12	Carbohydrate Metabolism	Discussion Board 2 (Due Sept. 9)
	Sept. 13 – 19	Lipid Metabolism	Discussion Board 3 (Due Sept. 16)
	Sept. 20 – 26	Protein Metabolism	Discussion Board 4 (Due Sept. 23) <b>Unit 1 Exam (Sept. 25)</b>
<b>Unit 2</b> <b>Energy Balance</b>	Sept. 27 – Oct. 3	Integrative Metabolism	Discussion Board 5 (Due Sept. 30)
	Oct. 4 – 10	Energy Utilization/Storage	Discussion Board 6 (Due Oct. 7)
	Oct. 11 – 17	Energy Balance	Discussion Board 7 (Due Oct. 14)
	Oct. 18 – 24	Dysregulation of Energy Balance	Discussion Board 8 (Due Oct. 21) <b>Unit 2 Exam (Oct. 23)</b>
<b>Unit 3</b> <b>Nutrigenomics</b>	Oct. 25 – 31	Gene Structure/Function	Discussion Board 9 (Due Oct. 28)
	Nov. 1 – 7	Gene-Diet Interactions	Discussion Board 10 (Due Nov. 4)
	Nov. 8 – 14	The Microbiome and Metabolome	Discussion Board 11 (Due Nov. 11)
	Nov. 15 – 21	Personalized Nutrition	Discussion Board 12 (Due Nov. 18) <b>Unit 3 Exam (Nov. 20)</b>
	Nov. 22 – 28	<b>Thanksgiving Break</b>	
	Nov. 29 – Dec. 5	Group presentations	<b>Final projects due (Dec. 11)</b>

## Course Policies

**STUDENTS' RESPONSIBILITIES:** As a student in this course, you are responsible for being curious, striving to stretch your brain, and of course, learning all of the course material specified in the syllabus. You may be required to learn some of the course material independently through readings specified in the study guide and lecture recordings on Canvas.

- You are responsible for completing all assignments on time and asking questions in advance if you don't understand an aspect of an assignment.
- You will put your full name and course number on the Subject line of email (e.g., Jane Doe NTR 365) so I can easily determine in which course you are registered.
- You will check your email account and course announcements regularly.
- You will not fall behind the syllabus/schedule.
- You will not consistently wait until the last minute to take assessments or submit assignments.
- While you MAY be given a grace period to allow for technical problems, you MUST report problems immediately to me and to IT@UT.

**LATE ASSIGNMENTS:** Five points will be deducted for each day an assignment is late.

**GRIEVANCE PROCEDURE:** Anyone feeling that a dispute exists after the grading of an assignment may submit a written grievance. The grievance should identify the item in dispute and provide arguments supporting the student's position. Grievances must be submitted within two class periods following the return of a course grade. Attach your entire assignment to the grievance.

**ACADEMIC AND PROFESSIONAL HONESTY:** Honesty and integrity must be practiced in all class activities. Cheating will not be tolerated. Violations of University rules on academic dishonesty are subject to disciplinary penalties including possible failure of the course and dismissal from the University. The Students for Judicial Services site has important information regarding academic integrity and standards of conduct. Students are expected to read, fully understand, and abide by this content. <http://deanofstudents.utexas.edu/conduct/>

**The least severe penalty for scholastic dishonesty will be a grade of F. ALL instances of scholastic dishonesty will be reported to the Dean's office and will appear on your official record.** No exam/quiz question or assignment answer should be preserved through any means whatsoever, including writing following the exam. Sharing exam questions, assignments, lecture slides, or any other course material via e-mail, Google doc, photographs, 'academic libraries', course sharing websites (e.g., Course Hero), Facebook (or other social media sites), or any other internet means is strictly prohibited. Violations of these policies are considered scholastic dishonesty and penalties outlined above will apply. All assignments will be reviewed for plagiarism, as well as wording consistencies with other submissions from both current and previous semesters. Current software makes plagiarism easily identifiable. Submit your own work or face penalties for scholastic dishonesty.

**ONLINE ACADEMIC HONESTY:** Class recordings in this class are reserved only for students, instructors, and TAs 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.**

**ACADEMIC ACCOMMODATIONS AND RELIGIOUS HOLY DAYS:** The Americans with Disabilities Act (ADA) (42 U.S.C. § 12101, et seq.) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. *Students with disabilities may request academic accommodations from the Division of Diversity and Community Engagement,*

*Services for Students with Disabilities*, <http://ddce.utexas.edu/disability/> , (512) 471-6259. By UT Austin policy, students must notify the professor of a pending absence at least fourteen days prior to the date of observance of a religious holy day. Should an assignment be due on one of these days, it must be submitted prior to your absence to avoid penalty for late submission.

#### COMMUNICATION AND INTERACTION EXPECTATIONS:

- Use proper grammar and syntax when posting discussion board responses and/or messages or questions.
- Interact appropriately and respectfully with instructors and your fellow class members.
- Respond in an appropriate timeframe (usually 24 hours) to emails and announcements (usually 48 hours).

**INTERNET ETIQUETTE:** There is an informal code of conduct that most people follow on the Internet. Usually people who break the code become the victims of flame emails. Netiquette includes not sending email or messages in ALL CAPS or with too many exclamation points or asking repetitive questions in forums that have FAQs posted. Sending spam is also a violation of netiquette. You are not legally obligated to follow proper netiquette, but you will have an easier time communicating with others over the Internet if you do.

**COPYRIGHT AND FAIR USE:** Copying, displaying, and distributing copyrighted works may infringe the owner's copyright. The University of Texas System's policy statement on Fair Use of Copyrighted Materials can help you determine whether your use of a copyrighted work may be an infringement. Any use of computer or duplication facilities by students, faculty, or staff for infringing use of copyrighted works is subject to appropriate disciplinary action as well as those civil remedies and criminal penalties provided by federal law. Copyright law applies to the Internet, which contains a mixture of copyrighted and non-copyrighted materials. An item does not have to display a statement of copyright to be copyrighted. It is assumed that an item is copyrighted until otherwise determined. For more information on copyright, see the University of Texas System Office of General Counsel web site.

**THE TEACH ACT:** Copyright law provides educators with a separate set of rights, in addition to fair use, to display (show) and perform (show or play) others' works in the classroom (not online). These rights are in Section 110(1) of the Copyright Act and apply to any work, regardless of the medium.

**CONDUCT:** "Courtesy, politeness, manners, and civility are all, in essence, forms of awareness. Being civil means being constantly aware of others and weaving restraint, respect, and consideration on into the very fabric of this awareness. Civility is a form of goodness; it is gracious goodness. But it is not just an attitude of benevolent and thoughtful relation to other individuals; it also entails an active interest in the well-being of our communities and even a concern for the health of the planet on which we live."

See P.M. Forni – Choosing Civility: The 25 Rules of Considerate Conduct

**PRIVACY:** Canvas software automatically stores course access records, quiz scores, email postings, discussion postings, and chat room conversations. This is one more reason to make sure that your communications adhere to the netiquette policy.

**ALTERNATE COMMUNICATION:** In the event that a Canvas problem makes it impossible to use the course communication tools for more than 24 hours, the instructor will communicate with class members through email.

**CHANGES:** The syllabus, along with course assignments and due dates, are subject to change. It is your responsibility to check Canvas for corrections or updates to the syllabus. Any changes/corrections to the course materials, assignment dates, or other updates will be posted



ahead of time in the course Announcements tool. It is your responsibility to check Canvas regularly for updates.

### Tips for Success

- Get familiar with the Canvas technology.
- Regularly check the Canvas course for announcements and updates.
- Log in to your Canvas course every day.
- Complete all required assignments and quizzes by the due dates.
- Participate in all required blog posts. Online learning is not solitary learning; you need to interact with your classmates.
- Take responsibility for your own learning. Take the course and yourself seriously.
- Be aware of the amount of class work you need to accomplish. Eliminating on-campus meetings does NOT mean less work. Usually, eight hours of work outside of class are required every week in order to succeed in this course.
- Be polite and respectful in all communications with the instructor and other members of the class.

### Student Resources

The following resources are available to all students of UT-Austin:

- Campus Safety and Security: <http://operations.utexas.edu/units/csas/>
- Counseling and Mental Health Center: <https://cmhc.utexas.edu/>
- Forty Acres Pharmacy: <http://www.fortyacrespharmacy.com/>
- University Health Services: <https://healthyhorns.utexas.edu/>
- University of Texas Police Department: <http://police.utexas.edu/>
- UT Recreational Sports: <https://www.utrecsports.org/>

### Important Dates

- September 13  
Twelfth class day; this is the date the official enrollment count is taken. This is the last day an undergraduate student may add a class except for rare and extenuating circumstances, and the last day to drop with possible refund.
- December 9  
Last class day