

The Indiana Academy for Science, Mathematics, and Humanities
SCI04313 Biology II: Introduction to Nutrition (CL)
Fall 2026

Instructor: Donald Winslow, Ph.D.

donald.winslow@bsu.edu

Office: Elliott Hall B008E

Phone: (765)285-7463

Office hours: Monday 11 AM-12 PM, 1-2 PM, 3-4 PM
 Wednesday 11 AM-12 PM, 1-2 PM, 3-4 PM
 Friday 11 AM-12 PM, 1-2 PM

These office hours are suggestions for when you might find me in my office. However, you are welcome to check to see if I am available at other times. Also, I may occasionally be elsewhere during the stated office hours, so it is best to make an appointment if you want to be sure to catch me. Walk-ins are welcome if I am available, though!

Class meetings: In Burris 209. 9-9:50 AM MWF; Labs Thursdays from 9-10:45 AM in Burris 209

Some “laboratory” activities will be field excursions; i.e., we will conduct them outside.

Description: From the course catalog (<https://academy.bsu.edu/catalog/>):

Prerequisite: None

Co-requisite: Biology II: Introduction to Nutrition Lab (SCI4313L)

Credit: 1.5 credits

Offered: Fall

This course will explore the general principles of nutrition that are needed for optimal health. The chemical composition of the major macronutrients and micronutrients will be examined. Additionally, the physiology behind proper digestion and absorption of consumed nutrients as well as their use in cellular energy metabolism will be studied. For the laboratory component of the course, the class will learn to comprehend nutrition and food labels, utilize nutrition tracking tools, as well as perform hands-on activities to explore the chemical makeup of food molecules. Current topics in nutrition will be integrated into the course material, such as evaluating the efficacy of dietary trends and gaining helpful strategies to eat healthier as a high school student. This course is highly recommended for students who are interested in increasing their knowledge base about basic nutrition in order to make more informed decisions about leading a healthy lifestyle.

Student learning outcomes:

After successful completion of this course, students will understand nutritional needs for optimal health, become informed consumers of nutritional information, and gain helpful strategies for incorporating nutritious eating habits as a component of a healthy lifestyle.

Topics:

Lectures will cover the fundamentals of nutrition, homeostasis, nutrition guidelines and recommendations, digestion, energy metabolism, carbohydrates, lipids, protein, vitamins, minerals, and water. In lab we will explore homeostasis, information literacy, food labels and tracking, enzymes and digestion, energy metabolism, energy balance, carbohydrates, lipids, proteins, micronutrients, and water.

Course materials:

Textbook:

Schiff, Wendy J. 2021. *Nutrition Essentials: A Personal Approach*, 3rd ed. McGraw-Hill: New York.

We will use various other information sources throughout the semester.

Please note that some aspects of this course may need to be changed during the semester, so this syllabus is subject to revision. If the syllabus is revised during the semester, the updated syllabus will be posted on Canvas. Please refer to Canvas for updated information.

I welcome input from students on how to develop this course.

Assignments:

The assignments for the course are shown in the table below.

Assignment type	Points	Number	Total
Participation and conduct	15	2	30
Homework	10	7	70
Lab report	20	15	300
Presentation	40	2	80
Examination (test)	100	4	400
Inquiry and outreach project	120	1	120
Total			1000

Grading Scale:

100 – 93% = A	< 90 – 87% = B+	< 80 – 77% = C+	< 70% = D*
< 93 – 90% = A-	< 87 – 83% = B	< 77 – 70% = C	
	< 83 – 80% = B-		

Grades will be posted on Canvas and synced to Powerschool. If I am late posting grades, you can estimate your current grade in the course by adding all the points you have earned or anticipate earning from all assignments. There are 1000 points available in the course, so each point is worth 0.1%.

Please make an appointment to talk with me if you are concerned about your grade or uncertain about your standing in the course.

Participation and conduct:

I will assign a few points at the end of the semester to reflect your degree of participation in lab and lecture and your conduct. Participation requires being consistently present (i.e., few unexcused absences) and engaged in course content, discussions, and activities. Good conduct entails adhering to safety guidelines, being polite to others, and not causing disruptions. This will be done on a holistic basis; I do not intend to count every time you raise your hand or don your safety glasses.

Homework assignments:

The goals of homework are to review material that has been learned previously and/or to prepare for material that is to be covered in the coming weeks. Each homework assignment will be submitted on paper or on Canvas, and most will be worth about 10 points. Homework assignments will be graded for correctness and completeness.

Laboratory activities:

Lab activities will permit hands-on exploration of concepts learned in class. Most lab reports will be submitted individually by each student on Canvas on a due date set by the instructor. Some may be turned in on paper in class if the instructor decides that is appropriate for the exercise. Each lab assignment will be worth 20 points. During some labs, students will work with lab partners. Please review the lab exercise and any relevant training materials before lab so that you know what you are doing before you begin. Please check your email and Canvas regularly for any updates.

Presentations:

To make sure that I do not do all the talking in the course, we will schedule time for you to present course material and explore topics that interest you. At the end of the semester, we will reserve a day for you to present your Inquiry & Outreach Project.

Examinations:

Although each test is weighted equally, the last one is a comprehensive final exam.

Inquiry and Outreach Project:

This semester you will undertake a project that involves first reviewing scholarly nutrition literature to answer one or more research questions and then developing an informative media product (video, pamphlet, poster, or something else) to disseminate to the broader Academy community.

Attendance

Please arrive on time to class. The instructor is required to take attendance so that all students are accounted for. If you arrive late to class, someone might start checking to see where you may be. If you are late, you may need to remind the instructor to change the absence to tardy. This will disrupt our workflow and possibly the workflow of others, so please try to avoid being late.

If you miss class for any reason, you are responsible for obtaining any notes, announcements, reading materials, or assignments from the instructor or a classmate. If an unavoidable conflict, emergency, or illness prevents you from attending class or completing an assignment on time, please inform the instructor as soon as possible (preferably beforehand). It is also necessary to tell a school nurse, a school mental health professional, or Attendance Coordinator Renee Drumm. The Academy and not the instructor determines whether an absence is excused or unexcused. Unexcused absences may reduce the number of participation points you earn (see above under Assignments). Also, you will have a much greater chance of success if you are present as much as possible.

Indiana Academy Attendance Policy

Attendance is mandatory. Students may receive excused absences at the professional discretion of the school nurse, the associate director of mental health services, the associate director of college counseling and student engagement, the

director of academic affairs, and the executive director of the Indiana Academy. Unexcused absences occur when students miss class without prior approval from the aforementioned designated school officials. Continued absences (both excused and unexcused) from Academy classes increase the likelihood of unsuccessful completion.

Alongside steady attendance, students are expected to maintain consistent healthy habits of decorum, respect, and kindness towards their classmates, instructors, and teaching assistants. When students fail to meet these classroom behavioral standards and academic habits, it is the expectation faculty engage appropriately to bring quick and immediate resolution. When students consistently fail to meet these behavioral standards and academic habits in the classroom, administrative action will be taken involving, but not limited to, parent/guardian communication, removal of privileges, administrative withdrawal from the classroom, suspension, and expulsion.

Safety

Please familiarize yourself with lab safety protocols and perform procedures with care. Because we hold class in a science lab, no food, gum, or drinks can be brought into the classroom. Your work area should always be free of clutter and only have the necessary materials (pens/pencils, notebook, etc.). If there are glassware breakage or equipment problems, please notify the instructor immediately to ensure proper safety and equipment protocols are followed.

Academic conduct

It is important to prepare for each class meeting by completing the reading and any assignments that are due. Assignments should be submitted on Canvas or in class, depending on the assignment. Although some activities such as labs may be completed together as a class, each student is individually responsible for submitting assignments with original writing (not copied from your lab mate). You are encouraged to discuss answers to lab activities with other class members, but the wording should not be the same. Do not share word processing files with each other, but make sure each student has access to the raw data for analysis.

You are expected to conduct yourself according to the Indiana Academy Student Handbook (<https://academy.bsu.edu/handbook/>), especially the Code of Conduct and the section on Academic Integrity. On writing assignments, please be sure to use your own wording and cite all sources of information, whether from the Internet or otherwise. If you are not sure how to cite something, ask the instructor. Note that language copied verbatim from a book, website, another student's paper, or any other source is considered plagiarism unless it is in quotation marks and cited. Plagiarism is a form of academic dishonesty. Please do not plagiarize or cheat in any other way. An infraction may result in a 0 for the assignment. Also, the instructor is required to report any ethics violations to the Academic Integrity Board.

Artificial intelligence (AI) technology

Technologies referred to as “artificial intelligence” (AI) are becoming increasingly salient in our lives. The original Turing test (Turing, 1950) for artificial intelligence is to engage in dialogue with what we would now call a “chatbot”. If the discourse is indistinguishable from that of a human, then it is considered artificial intelligence. Modern large language models such as ChatGPT (OpenAI, 2022) exemplify this approach by stringing together words from human writing to sound intelligent.

These tools can be very useful, from simple spellchecks to the generation of computer code. As we adopt these technologies, however, it is important to verify that information obtained is correct and to avoid presenting as our own work that was produced by software or anyone else. We can avoid these pitfalls if we use the auto-generated content as a learning tool but not as a finished product. Find the original sources of information and cite those. ChatGPT sometimes invents references that do not exist, so make sure you look at original sources of information. Do not paste auto-generated content into your paper as if it were your own work; this is academic dishonesty.

We may have occasion to use artificial intelligence tools in class. Perhaps you will want to use such tools outside of class when you are working on assignments for class. I do not recommend using large language models for writing, because I want to read what you have to say rather than something generated by a computer. The papers you write for this course will be based on your own research, so you should expect to write them yourself rather than try to develop a prompt to direct ChatGPT or another language model to do so. You may use spellcheck and grammar tools to proofread your writing. If you do use AI, please acknowledge your use and describe how you used it. If a paper presents auto-generated content as if it were written by the student, I will not grade it. You can cite AI tools following my example here.

References and resources on AI:

OpenAI. 2022. ChatGPT, Version 3.5. OpenAI, accessed 12 May 2024 at <https://chatgpt.com/>.

Turing, Alan M. 1950. Computing machinery and intelligence. *Mind* LIX(236):433-460, <https://doi.org/10.1093/mind/LIX.236.433>, accessed 12 May 2024 at <https://academic.oup.com/mind/article/LIX/236/433/986238?login=false>.

Classroom conduct

Please be considerate of other classmates. Keep any devices not used for classroom activities silenced or off. Use of electronic devices during class can be distracting to yourself and others and interfere with the learning process. Your phone should be put away. A new Indiana state law does not permit phones to be used in the school building at all. We will often use laptops in class for class activities, but do not use laptops or tablets for non-class activities. A calculator (but not a phone) may be used for exams.

IA Wireless Device Policy:

Per Indiana Code 20-26-5-40.7, each school corporation must adopt and implement a wireless communication device policy that:

- Prohibits a student from using a wireless communication device unless directed by the classroom teacher for educational purposes only.

If required for participation in classroom instruction, a teacher may direct students to use only laptops or tablets. Cellphones, gaming devices, and smartwatches may not be used and must always be stored in a residential room, locker, backpack, or cellphone holders in the classroom. Students are prohibited from using any wireless communication device in the hallways, bathrooms, and all other locations inside the instructional building unless directly instructed to by a teacher. Students violating this policy may have their phone taken by a Burriss or Indiana Academy school official for the remainder of the day. Phones can be picked up from the school office at the end of the instructional day. Repeated violations of this policy will result in further consequences as outlined in the Student Handbook. This policy does not apply to the residential hall (Wagoner/Elliott) except when a teacher temporarily holds a class session in a location other than the

Burris Laboratory building. This policy does not apply to Ball State University courses or other Ball State University buildings.

Because you are not allowed a phone in class but must authenticate on a computer to use the Ball State networks, I suggest that you obtain a hardware token from the technology office at the Bracken Library. This will allow you to authenticate without using your phone. Until you have a hardware token, you may use your phone for authentication purposes only if you put it away as soon as you are connected.

Please treat each other with respect and refrain from annoying behavior. Do not interrupt another student or the instructor. Raise your hand if it is challenging to find an opportunity to speak. Examples of improper conduct include having extended conversations, working on assignments for other courses, sleeping, etc. Serious and/or chronic problems may be cause for dismissal from the course.

Late work

If you are late submitting an assignment because you missed class, see the section above on attendance. If an absence is excused by the Academy, I will make every reasonable effort to ensure you have the opportunity to make up any assignments associated with the absence. If you are late submitting an assignment or homework associated with an unexcused absence or for a reason unrelated to missing class, I may grade the assignment as time allows. Late assignments can generally be submitted on Canvas or on paper in my mailbox, depending on the assignment.

If a test or quiz is missed because of an excused absence, I will make every reasonable effort to ensure you have the opportunity to make it up. Make an appointment with me to take it in my office. If the absence is unexcused, a make-up test or quiz may be allowed at the instructor's discretion. For a make-up test resulting from an unexcused absence, a 10% penalty will be deducted from the score for each day after the scheduled test date until the make-up test is taken.

If a lab is missed, it may be difficult to arrange for a student to make it up due to supplies and logistical constraints. If the absence was excused, the instructor may need to substitute an alternate activity. If you miss a lab or other in-class activity, arrange a time with me when you can complete the activity.

Library research

Through your association with Ball State University, you have access to an academic research library with many useful materials. This includes online access to many peer-reviewed scientific journals through bibliographic databases to which Ball State subscribes. To access these databases, go to <https://www.bsu.edu/library>, and click on "Databases". The databases are listed in alphabetical order by the first letter. Two good ones to try are Academic Search Complete under "A" and JSTOR under "J". PubMed is also very good for finding information on nutrition and the biomedical sciences. When you click on one of these databases, you will be prompted to log into your Ball State account. You can search for articles on particular topics and then access the full text of many articles from the journal publishers' websites. Also, if you are logged into <https://myballstate.bsu.edu>, try searching on Google Scholar at <https://scholar.google.com>. You should see "Find it at Ball State" for references available through university subscriptions.

Student accommodations and special circumstances

If you have an IEP or a 504 that provides accommodations, have emergency medical information to share, or need special arrangements in case the building needs to be evacuated, please make an appointment to speak with me as soon as possible.

If you are struggling with study habits, stress, and/or personal issues, I encourage you to discuss the situation with your Student Life Counselor and/or contact the Guidance Office for help in addressing these issues so that you can thrive at the Academy. Many resources are available for students, and important contact information is listed below:

For guidance: Meg Wright (mewright@bsu.edu), phone:765-285-7407; first office in Elliott.
To find a tutor: Meg Wright (mewright@bsu.edu), phone:765-285-7407; first office in Elliott.
For mental health: Dr. Mindy Wallpe (mcwallpe@bsu.edu), phone: 765-285-5483; office: WA 160B.

INDIANA ACADEMY BENEFICENCE STATEMENT:

Ball State University aspires to be a university that attracts and retains outstanding faculty, staff, and students. Ball State is committed to ensuring that all members of the campus community are welcome through our practice of valuing the varied experiences and worldviews of the people whom we serve. We promote a culture of respect and civil discourse as evident in our Beneficence Pledge. As a reflection of Ball State's commitment to respect, civil discourse, and the Beneficence Pledge, inclusiveness at the Indiana Academy emerges as one of the priorities of our living and learning community. We strive to exist together respectfully and compassionately, creating an environment where every member can thrive.

Schedule (subject to revision as needed)

10 August	Introduction to class, course planning, class safety	Read the syllabus
12 August	Class canceled due to flood	
13 August	Lab canceled due to flood	
14 August	Introduction to nutrition & nutrients	Read Unit 1, Modules 1-3 in Schiff
17 August	Homeostasis	
19 August	Nutrition information	Read Unit 2 of Schiff textbook
20 August	Lab safety, lab safety worksheet, donning and doffing gloves, starch-testing lab	
21 August	Nutrition recommendations, nutrition guidelines	Read Module 3.1-3.2
24 August	Information literacy lab	Work on information literacy lab
26 August	Food labeling, food labeling activity	Read Module 3.3
27 August	Homeostasis lab, homeostasis exercise	Complete homeostasis lab, exercise
28 August	Making wise choices, supplements	Read Modules 3.2, 3.4
31 August	Biological hierarchy, food, metabolism	Read Module 4.1
2 September	Digestion	Read Unit 4, pp 77-86, 95-97
3 September	Food labels lab	Complete food labels lab
4 September	Parent Shadow Day, digestive system disorders	Read Module 4.3
5-8 September	Labor Day Extended Break (no class)	
9 September	Plan Inquiry & Outreach Projects, review for exam 1 over Units 1-4	
10 September	Begin food tracking lab	
11 September	Exam 1 over Units 1-4	Take exam 1
14 September	Carbohydrates and sweeteners	Read Module 5.1
16 September	Blood glucose regulation, food as fuel	Read Module 5.2, proposal due
17 September	Complete food tracking lab, meal timing & justice	Read <u>Danziger et al.</u> paper
18 September	Glucose transporters	

21 September	Energy metabolism, carbohydrates, and health	Module 5.3, Appendix C
23 September	Carbohydrate recommendations	Read Appendix B, Module 5.3
24 September	Glycemic index, glycemic load, and diabetes	Calculating glycemic load
25 September	Youth Environmental Leadership Summit, IU Bloomington, carb homework	
28 September	Lipids, lipid storage	Read Modules 6.1-6.2
30 September	Lipid digestion, absorption, transport, metabolism	Module 6.2, Essential Concept 6.5
1 October	Carbohydrate lab, analyze food tracking data	Complete carbohydrate/amylase lab
2 October	Earlham College...?	
5 October	Cardiovascular disease, lipid recommendations	Read Module 6.3
7 October	PSAT	
8 October	Lipid lab	Complete lipid lab
9 October	Proteins, protein digestion	Read Modules 7.1-7.2
10-18 October	Fall Break (no class)	
19 October	Proteins & health, proteins in foods	Read Module 7.5
21 October	Food budgeting	Read Module 7.6
22 October	Energy metabolism lab	Complete energy metabolism lab
23 October	Vegetarianism and veganism	Module 7.4
26 October	Enzyme activity, modeling with Play-Doh	Construct enzyme models
28 October	Review for exam 2 over Units 5-7	Lipid homework, pp 155-156
29 October	Digestion lab	Complete digestion lab
30 October	Exam 2 over Units 5-7 (see study outline)	Take exam 2
2 November	Vitamins	Modules 8.1, Inquiry component
4 November	Fat soluble vitamins (K, A, D, E)	Read Module 8.2
5 November	Enzyme lab	Complete enzyme lab
6 November	Water soluble vitamins (B's, biotin, choline, C)	Read Module 8.3
9 November	Vitamins and cancer	Read Module 8.4, course evaluations
11 November	Minerals	Read Module 9.1
12 November	Student presentations, exam 2 debriefing	
13 November	Key minerals	Read Module 9.2
16 November	Lecture on water	Read Modules 9.3-9.4
18 November	Review for exam 3 over Units 8-9	Review Units 8-9
19 November	Energy balance lab	Complete energy balance lab
20 November	Exam 3 over Units 8-9	Take exam 3
23 November	Weight and obesity	Read Module 10.1-10.2
25-29 November	Thanksgiving Break	
30 November	Lab on melting points of oils	Smoothie planning
2 December	Oil melting point lab—measure melting point	
3 December	Water lab, student project presentations	Outreach component due
4 December	Complete oil melting point lab	Activity activity (tag)
7 December	Managing weight, disordered eating, activity levels	Read Modules 10.3-10.5
9 December	Nutrition for life & world, Modules 11.1-11.3	Inquiry & Outreach project due
10 December	Smoothie lab, analyze water data	Make smoothies, make recipe book
11 December	Review session for final exam (Units 1-11)	Make-up day for presentations
14-17 December	Finals week: final exam (Units 1-11)	Lab/field notebook due at final exam