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Instructor Information

Instructors	Email	Office	Office hours
Dr. Sean Weise (coordinator)	weisesea@msu.edu	105B Biochemistry 517-353-2850	*Zoom:* Thursday 2-3 pm or by appointment *
Dr. Stacy Hovde	deweesst@msu.edu	409 Biochemistry	*Zoom:* Wednesday 2-3 pm or by appointment *
Carrie "Bels" Gregg -Nibibinaasii (TA)	greggca2@msu.edu	N/A	N/A

* Links to zoom office hours included below in Virtual Office Hours section and posted in the Office Hours Zoom Links module in D2L

Course Information

BMB200: Introduction to Biochemistry Summer 2026; Online section; 4 credits

The online section of this course is for very highly motivated, self-paced learners. Due to BMB200 being a 4-credit course, it is not unrealistic to spend 3 hours of work and study per week for each credit, resulting in 12 hours/week for a traditional 15-week course. Considering that this is a 7-week course, it is reasonable that you could easily spend ~20+ hours in a week to work through material and complete the various assignments. There is a large amount of content available in this course from various sources, and it is expected that students will visit multiple resources (including D2L and the textbook), extract and organize important information and self-monitor their own learning to be successful. It is HIGHLY encouraged for you to be proactive in your self-scheduling, so you have enough time to complete the course material and assignments before their due dates, as well as to give yourself enough time to ask questions where your understanding of the material has

some gaps. Students are expected to log-in to the course D2L site daily, as well as regularly check email for course related information. A reliable internet connection is a necessity for this course. Due to the time commitment necessary for success in this course, BMB200 is incompatible with Study Abroad experiences during Summer Session II.

This course is **not intended as preparation for post-graduate health sciences requirements or admission tests** (e.g., Medical College Admission Test; MCAT) **or graduate or professional programs focused on molecular biology or health sciences**. Although this course uses a few examples of disease and medicine, this course **does not** cover biochemical basis of disease and medicine in depth.

Course Rationale

In this course, you can learn how the food you eat lets you live. All food can be broken down into four major components, the same major components required for life. This class will systematically present the physical and chemical properties of these components, the role of each of these components in your body, and the processes by which your body utilizes these components.

Course Goal

When you successfully complete this course, you will have a conceptual understanding of how the basic components found in the food you eat function in your body.

Course Objectives

Explain the roles water, chemical equilibrium, and pH play in your body.

Recognize the chemical structure of the molecular building blocks found in the food you eat and identify the important chemical and physical properties of these building blocks.

Describe how these molecular building blocks polymerize into larger molecules and organize into cellular structures.

Compare and contrast the functions of these building blocks and their polymers in living cells.

Explain how the chemical and physical properties of these building blocks and the organized structures cause them to carry out their specific functions in your body.

Describe major principles of metabolism and use these to compare different specific metabolic pathways.

Describe the metabolic pathways used to break down the food you eat to produce the cellular building blocks and capture the energy your body needs.

Discuss the relationship between coenzymes and vitamins and explain the roles of specific coenzymes in metabolism.

Explain basic physical and chemical concepts that underlie cellular processes and apply these to problems involving your body's utilization of food and the biomolecules it contains.

Explain how information is stored and passed on based on the chemical and physical properties of the molecules found in living cells.

Required Materials: Textbook

Biochemistry, 9th ed., 2018, Mary Campbell, Shawn Farrell and Owen McDougal, Brooks/Cole Publishing. Either print or e-text is acceptable. Previous editions (8 or 7th) of this textbook are acceptable. You only need access to the textbook; you are not required to have access to the Cengage digital platform.

Textbook information: https://www.cengage.com/c/biochemistry-9e-campbell?filterBy=Student

Prerequisites

General chemistry and one semester of organic chemistry (or course equivalent).

Communication in the Course

Instructor to student

Course information will be distributed mainly through the D2L course management system. This will include emails, announcements, and calendar postings. Students should check D2L several times each week for course-related information and have emails forwarded from the system to an email account they check regularly.

Student to instructor

General questions about the course should be emailed to either instructor. Questions emailed directly to the instructor or teaching assistant that have general course relevance to other students (i.e. where can I find my score for assignment #3, how many quizzes can we drop, etc.) may be posted by the instructor in a course FAQ after removing any identifying information. This helps reduce the number of repetitive email questions in the course. *If you do not want your question potentially posted in a D2L discussion thread, please indicate this in the text of your email.*

___**If emailing the instructor or teaching assistant, make sure to include "BMB200" in the subject line.**

Virtual office hours

Virtual office hours are an opportunity to interact with the instructor directly and ask questions or get help with course material. Office hours are held every week at the time(s) listed above under Instructor Information. If the scheduled time is not convenient for you, please email a course instructor to find another agreeable time to meet over Zoom or in person.

To join the virtual office hours, you will need to use Zoom video conferencing software. This software allows for video conferencing, text chat, and screen sharing between multiple simultaneous users. Zoom is a free add-in that works with most web-browsers; you can learn more and get technical help at https://msu.zoom.us. The first time you visit the office hour link, you will be prompted to download and install a small application. You may choose

to join the office hours with/without video and/or audio. The link to access virtual office hours will remain the same for the entire semester:

- Dr. Weise
  - https://msu.zoom.us/j/98366833871
  - Passcode: 200
- Dr. Hovde
  - To be determined later

Grades

Grading

Final grades will be based on the assessments shown below:

Assignment Type	Weight	Note
Homework	10%	***Average score of all homeworks*** in the course; highest attempt score used for each homework.
Quizzes	50%	The lowest quiz score will be dropped. The quiz grade will then be the average of all the remaining quizzes.
Applications of Biochemistry	40%	***All the applications of biochemistry assignments will be used to determine course grade***; value of each assignment will be indicated in D2L gradebook and assignment rubrics.

The course grades will be determined based on the scale shown below. Grades will be rounded to the nearest tenth of a percent.

If your overall percentage is between:		Overall course grade
100	90.0	4.0
89.9	85.0	3.5
84.9	80.0	3.0
79.9	75.0	2.5
74.9	70.0	2.0
69.9	65.0	1.5
64.9	60.0	1.0
59.9	0	0

There are no extra-credit or bonus assignments for this class. Make sure to give your best effort on each assignment to earn your best grade for the course.

Attendance policy

There are no in-person attendance requirements for this course. Although there are no online attendance policies and/or points for this course, there are numerous assignment deadlines throughout any given week. It is expected that students are visiting the D2L course website several times per week and keeping track of assignment deadlines. Because assignments are open for completion for several days before they are due, ***only exceptional and documentable reasons for needing a late submission will be accepted.*** *Reasons such as*, but not limited to, religious observances, travel, loss of internet/power will not be

accepted. If there are upcoming items in your schedule that will take up a large amount of your time, it is your responsibility to ensure that you complete your work. No make-up assignments are offered for any reason.

In the case of a grief absence that will extend multiple days, students must notify the Associate Dean or designee of their college of the need for a grief absence and must provide appropriate verification. The associate dean or designee will work with the student to determine the length of the absence and will notify faculty of the absence period. The policy on grief absence is described here: https://reg.msu.edu/ROInfo/Notices/GriefAbsence.aspx.

Assessments

Homework

Each module will conclude with an online homework assignment. These assignments are designed to assess whether students have learned the necessary key points of the module. These assignments consist of a variety of question types and are untimed. Students will generally have multiple submission attempts at homework assignments and only their best score will be used. In this way, students are encouraged to revisit questions and topics that need additional learning and try the homework again to demonstrate learning. **It is the student's responsibility to check each homework assignment for the specific grading policies before starting**. Because there are multiple attempts allowed for each homework and homework assignments are open for a length of time, there will be no excuses accepted for missing a homework assignment deadline. **All homework assignment scores will be used to calculate your final course grade. Each homework assignment will be weighted in the final course grade by the number of points it contains.**

Quizzes

At the end of every unit, there is a quiz. Quizzes are timed, using a lock-down browser, online assessments that address stated learning objectives for the instructional unit. Quizzes may contain questions that are taken directly from, are similar to, or are unique

from the homework assignments. Quizzes will contain a variety of question types; *students should expect at least one short answer writing question on every quiz*. Students will have a single attempt for each quiz and may not be able to revisit previously answered questions, so students should be well prepared and have checked the quiz grading policy before beginning each quiz. Because only one submission is allowed and quizzes will have enforced time limits, **your one lowest quiz score will be dropped from your final grade calculation**. This dropped quiz will also cover problems such as loss of power during the quiz, internet connection reset, an emergency that requires students to travel, etc. As such, there are no excused absences for missing a quiz deadline. If you cannot complete a quiz before the deadline for any reason, it will count as your one dropped quiz. Any additional missed quizzes after the first will count as zeroes in the gradebook. Each remaining quiz will be weighted equally in the final course grade.

Applications of Biochemistry assignments

There will be a weekly applications of biochemistry assignment. These assignments will require students to read a science journal article or watch a science video. Students will then answer five to six questions about the article or video. The goal of these assignments is to allow students to see connections between the biochemistry they learn in the class with content they may read about in newspapers and magazines or learn about in the news. Details and deadlines for each assignment will be posted in D2L. Students are expected to complete all of these assignments (i.e., none of these assignments are dropped) and the course late assignment policy will apply. These assignments will use Turn-It-In enabled drop boxes.

Late assignments

Homework and Quiz assignments will not be accepted after the posted due date. Generally, Applications of Biochemistry writing assignments are accepted after the due date, with a 25% penalty for each 24-hour period the assignment is submitted after the deadline. Because assignments are open for a length of time before the actual due date, it is expected that students are working on assignments well before the deadline and ***only extraordinary***

and verifiable circumstances will be considered for excuse for missing a deadline. Retroactive requests for accommodations will not be considered.

Assignment Grading and Feedback

Homework assignments will be computer graded immediately after submission. The full answer key is available soon after the assignment due date. Quizzes contain some questions that are computer graded and some questions which may require hand grading. Quizzes are graded and results returned within 48 hours of the posted submission deadline. The full answer key for quizzes becomes available when the quiz scores are returned. All applications of biochemistry assignments must be hand graded. Every effort is made to return both your score and specific feedback within 72 hours of the assignment due date. At minimum, your score and feedback will be returned no later than 24 hours before the next applications of biochemistry assignment deadline, so that you are able to read the feedback and incorporate any changes into your next assignment.

Errors in scoring

If you believe there is an error in the points awarded for an assignment, ***please contact Dr. Weise or Dr. Hovde within 48 hours of your score being published.*** This includes concerns about the correct answer in a grading key, how a rubric was applied to your writing, how points were calculated, etc.

Academic Honesty

The Spartan Code of Honor states, "As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do." In addition, Article 2.III.B.2 of the Student Rights and Responsibilites (SRR) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." This course adheres to and strictly enforces the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on

Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site: www.msu.edu.) Therefore, unless authorized by your instructor, you are expected to complete all course assignments, except as noted below, without assistance from any source. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course and an Academic Dishonesty report must be submitted to the university.

Policies regarding students working together

Working together in self-assembled groups can be a powerful way to increase your learning. This is especially true when students encounter difficult content in college courses. Group work or study groups are encouraged while students are learning new material and exploring the recommended or alternative resources. Group work, such as discussing questions or helping locate resources, is allowed on the homework assignments, although direct sharing of answers is prohibited. Group work is also allowed during some parts of the applications of biochemistry assignments; reading and discussing the assigned articles is a valuable way to focus on the important topics. ***However, it is the expectation that all homework, quizzes, and applications of biochemistry assignments are the individual and sole intellectual effort of the student enrolled in the course. As such, group work on these assessments is not allowed.*** Put simply, discussing course content can be helpful. When it comes time for you to complete or write your individual assignments, work alone to complete them. If this policy is violated, repercussions as outlined in the Academic Honesty section must occur.

Policy on Artificial Intelligence (AI) Use in Writing Assignments

BMB200 students are encouraged to develop critical thinking and effective writing skills by thoughtfully engaging with the applications of biochemistry assignments. Responsible use of Artificial Intelligence (AI) tools (e.g., chatbots, large language models) is encouraged to support this learning process. Specifically, AI may be used collaboratively to brainstorm ideas, explore scientific concepts, gather background information, structure arguments, and

provide feedback to refine your drafts. However, your final submission must reflect your own analytical thinking, synthesis of ideas, and original expression. AI-generated content should be treated as a collaborative starting point, to be critically evaluated and built upon by you, not a final product. Assignments that rely heavily on unmodified AI-generated text or involve minimal student input undermine the educational objectives of this course and are considered breaches of academic integrity. Any use of AI that breaches the code of academic honesty policy and may result in a failing grade for a portion or the entire assignment. Please consult with the instructor if you have questions about appropriately using AI in this course.

Turn-It-In

Consistent with MSU's efforts to enhance student learning, foster honesty, and maintain integrity in our academic processes, instructors may use a tool called Turnitin to compare a student's work with multiple sources. The tool compares each student's work with an extensive database of prior publications and papers, providing links to possible matches and a 'similarity score'. The tool does not determine whether plagiarism has occurred or not. Instead, the instructor must make a complete assessment and judge the originality of the student's work. *All submissions to this course may be checked using this tool*.

You do not need to create an additional account to use Turn-It-In. By using the assignment dropboxes provided within D2L (MSU's course management system), your submission is tagged with your name and username, visible only to the instructor. Student submissions may be kept in the global Turnitin repository, the MSU-only Turnitin repository or not at all based on the assignment.

Students should use Turn-It-In to improve their own academic writing. Some students do not have experience in writing about articles with science content. Applications of biochemistry assignments are designed to help you improve this ability. Using Turn-It-In to evaluate your summary work presents an opportunity to improve your academic writing. It allows you to see where you've used direct quotes from the article(s) or borrowed the author(s') ideas, to make sure these places are properly cited. In addition, it will allow you

to determine the amount of "original" text that you've written and synthesized versus the amount of text that was written by the article author. When reviewing your own work via Turn-It-In, you should consider whether you've used too much original text from the article and to make sure you've only included the most important quotes to support your own writing.

Use of Social Media Derived from the Course

As members of a learning community, students are expected to respect the intellectual property of course instructor and each other. All course materials presented to students are the copyrighted property of the course instructor and are subject to the following conditions of use:

1. Students may record or download lectures or any other classroom activities and use the recordings or files only for their own course-related purposes.
2. Students may not share the provided course recordings or downloads with other students enrolled in the class. Each student is responsible for accessing course content through the course webpage in D2L individually.
3. Students may not post their own or the provided course recordings or other course materials online or distribute them to anyone not enrolled in the class without the advance written permission of the course instructor and, if applicable, any students whose voice, image or intellectual property is included in the recordings or file. This policy also applies to other students' work which you may view or review during assigned course activities.
4. Any student violating the conditions described above may face academic disciplinary sanctions.

Students with Disability Requests

Michigan State University is committed to providing equal opportunity for participation in all programs, services, and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation

has been determined, you will be issued an accommodation letter. Please present this form to the course instructor during the first week of class and/or 7 days prior to the accommodation date (test, project, etc). Requests received after this date will be honored as possible.

Help with Course Technology

Because this is an online course, this course makes significant use of the D2L course management system at Michigan State (d2l.msu.edu) and other distance learning services. *Specific software and technical skill requirements and accessibility are listed in a separate document found with other course introductory materials.* The links provided below are to MSU provided help sites with D2L and other distance learning services and contain information on resolving many student issues with online courses.

- http://help.d2l.msu.edu
- http://www.lib.msu.edu/dls/