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1. Instructor Information

1.1. Contact information

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Email</th>
<th>Office</th>
<th>Office hours</th>
</tr>
</thead>
</table>
| Kevin Haudek    | haudekke@msu.edu| 219 Biochemistry| Virtual: Tues. 2-3 p.m. & Thurs 11 a.m. - 12 p.m. (link below in section 3.4)
|                 |                 |                 | In-person: by appointment                                                     |
| Hang Nguyen     | nguye277@msu.edu| Teaching Assistant | N/A                                                                         |

Updated: 6/28/2016
2. Course Information

BMB200: Introduction to Biochemistry
Summer 2016; Online section; 4 credits

The online section of this course is for very highly motivated, self-paced learners. There is a large amount of content available in this course from various sources and it is expected that students will visit multiple resources, extract and organize important information and self-monitor their own learning in order to be successful in this course.

***This course is not intended as a rigorous preparation for graduate or professional school admissions tests (e.g. Medical College Admission Test; MCAT).***

2.1. 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.

2.2. 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.

2.3. Course Objectives:

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

2.3.2. 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.

2.3.3. Describe how these molecular building blocks polymerize into larger molecules and organize into cellular structures.
2.3.4. Compare and contrast the functions of these building blocks and their polymers in living cells.

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

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

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

2.3.8. 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.

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


2.4.1. Prerequisites: General chemistry and 1 semester of organic chemistry (or course equivalent).

3. Communication in the Course

3.1. Instructor to student: Course information will be mainly distributed through the D2L course management system. This will include emails, announcements and calendar postings. You should get in the habit of
checking D2L regularly for course-related information and have emails forwarded from the system to an email account you check regularly.

3.2. **Student to instructor:** General questions about the course should be posted in the appropriate Discussion thread found in the Introduction folder in D2L. Specific questions about course content should be posted in the Discussion thread in D2L in the appropriate Module folder.

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 the appropriate Discussion thread 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.**

The course instruction team will reply to all discussion posts within 24 hours and emails within 48 hours; most often the instruction team responds within a few hours.

3.3. **Discussion forum and peer communication:** Discussion forums in the course will be monitored by the course instructors. Students are encouraged to post questions about course content, helpful links to other materials they’ve found or news items related to the course in these discussion threads. However, it is expected that students post only course or college relevant and appropriate content in the course discussion forums. Good discussion forum etiquette is expected of all students; treat both instructors and other students with respect. Disagreements are OK to have in the discussion threads, but name-calling, offensive or vulgar language, threats, etc will not be tolerated. First-time violators will be given a warning (or if severe enough, reported to the university); repeated violations may result in a ban from
discussion forums, a grade penalty or if severe enough, disenrollment from the course and/or other university academic penalties.

3.4. **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) indicated above in Section 1. If the scheduled times are not convenient for you, please email the instructor to find another agreeable time to meet either in-person or virtually.

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 to/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](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:

[https://msu.zoom.us/j/729145923](https://msu.zoom.us/j/729145923)

If requested, the meeting ID is: 729 145 923

4. **Grades**

4.1. **Grading**: Final grades will be based on the assessments shown below:

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Weight</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>12%</td>
<td>Average score of all homeworks; highest attempt score used for each homework.</td>
</tr>
<tr>
<td>Quizzes</td>
<td>36%</td>
<td>Drop one lowest quiz score; then use average of remaining quizzes</td>
</tr>
</tbody>
</table>
Take It Deeper 52% Value of each TID assignments will be indicated in the directions posted in D2L; all TID assignments used to determine course grade

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

<table>
<thead>
<tr>
<th>If your overall percentage is between:</th>
<th>Overall course grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>93.0</td>
</tr>
<tr>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>92.9</td>
<td>87.0</td>
</tr>
<tr>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>86.9</td>
<td>81.0</td>
</tr>
<tr>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>80.9</td>
<td>76.0</td>
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<td></td>
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<td>75.9</td>
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<td>1.0</td>
</tr>
<tr>
<td>59.9</td>
<td>0</td>
</tr>
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<td></td>
<td>0</td>
</tr>
</tbody>
</table>

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

5. **Assessments**

5.1. **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 generally 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 “worth” the same amount in the final course grade, regardless of the number of questions it contains.

5.2. **Quizzes:** At the end of every weekly unit, there is a quiz. Quizzes are timed, 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 only 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 a your one dropped quiz. Any additional missed quizzes after the first will count as zeroes in the gradebook. Each quiz will be “worth” the same amount in the final course grade, regardless of the number of questions it contains.

5.3. **Take It Deeper assignments:** Throughout the course there will be a variety of Take It Deeper (TID) assignments. TID assignments will generally require students to read, write or comment about science journal articles or other peer-written papers provided in the course. 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. Students should expect to have one or two of these assignments per week. Details and deadlines for each TID will be posted in D2L. Students are expected to complete all TID assignments and the course late assignment policy will apply. TID assignments will use Turn-It-In enabled dropboxes.

5.4. **Late assignments:** Some assignments may not be accepted after the posted due date. If assignments are accepted after the due date, any submitted late assignment will be assessed a 25% penalty for each day (0-24 hour period) it is late. 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 **no “excuses” for missing a deadline will be accepted.**

5.5. **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 require hand grading. Quizzes are usually graded with 48 hours of the posted due date. The full answer key for quizzes becomes available when the quiz scores are returned. All Take It Deeper 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 Take It Deeper assignment deadline, so that you are able to read the feedback and incorporate any changes into your next assignment.

5.6. **Errors in scoring:** If you believe there is an error in the points awarded for an assignment, **please contact the instructor within 48 hours of your score being returned.** This includes concerns about the “correct” answer in a grading key, how a rubric was applied to your writing or how points were calculated, etc.

6. **Academic Honesty**

The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards. Academic honesty as described in the
Spartan Life Handbook (see in particular: Protection of Scholarship and Grades and Integrity of Scholarship and Grades) is expected in this course. Violations of academic honesty may result in one or more of the following: penalty grade or zero on a particular assignment, a penalty grade or zero for the overall course grade and/or an official report to the dean of your college, which may result in additional college- or university-level sanctions.

6.1. **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 not tolerated. Group work is also allowed during some parts of TID assignments; reading and discussing the assigned articles is a valuable way to focus on the important topics or sharing a draft of your paper with a friend is a good way to get early feedback. **However, it is the expectation that all quizzes and TID writing 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.** If this policy is violated, repercussions as outlined in the Academic Honesty section will occur.

6.2. **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 dropboxes provided within D2L (MSU’s course management
system), your submission is tagged with your name and username, visible only to the instructor.

Students should submit papers to Turnitin Dropboxes without identifying information included in the paper (e.g. name or student number), the system will automatically show this info to faculty in your course when viewing the submission, but the information will not be retained by Turnitin.

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 summary papers about articles with science content. TID 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, in order 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.

### 6.3. 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:

**6.3.1.** Students may record or download lectures or any other classroom activities and use the recordings or files only for their own course-related purposes.
6.3.2. 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 web-page in D2L individually.

6.3.3. 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.

6.3.4. Any student violating the conditions described above may face academic disciplinary sanctions.

7. 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 a verified individual services accommodation (“VISA”) form. Please present this form to the course instructor at the start of the term and/or two weeks prior to the accommodation date (test, project, etc). Requests received after this date will be honored as possible.

8. Help with Course Technology

Because this is an online course, this course makes significant use of the D2L course management system at Michigan State and other distance learning services. **Specific software and technical skills 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/
<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Theme 1</th>
<th>Theme 2</th>
<th>Theme 3</th>
<th>Theme 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Intro to Theme 1, Biochemistry and Biomolecules</td>
<td>Biochemistry</td>
<td>Overview of Metabolism</td>
<td>Information in the Central Dogma</td>
<td>Overview of Metabolism</td>
</tr>
<tr>
<td>1.2</td>
<td>pH and Buffers</td>
<td>Overview of Metabolism</td>
<td>Overview of Metabolism</td>
<td>Overview of Metabolism</td>
<td>Metabolism Function</td>
</tr>
</tbody>
</table>