(Science background not required.) A general introduction to human structure, functions, genetics, evolution, and ecology. The aim is to use scientific reasoning to make informed decisions about topics related to human biology. The human organism is examined from the basic cellular level and genetics, through organ systems, to interaction with the outside world. Discussion also covers pertinent health topics. Students may receive credit for only one of the following courses: BIOL 160 or GNSC 160.

Course Introduction

Human biology is the study of the human body and its different parts and systems, and of man’s evolution and future on this planet. The human body is a finely tuned machine with independent yet interdependent parts, all regulating each other’s activities and adjusting constantly to internal and external changes.

Homeostasis has been defined as a state of relative constancy, or a dynamic equilibrium. From the molecular to the cellular level, proceeding on to the tissue and organ system levels, feedback mechanisms help the body defend and repair itself, adjust to changes in the environment, and temporarily reach extreme performance levels (via adrenaline responses).

We are viewing health and disease in a brighter light as molecular biology unveils the secrets of the human genome. With the full blueprint of human DNA at our fingertips, we have arrived at a new era in medicine, accompanied by all the dangers and warnings that all powerful revolutions bring with them. The final frontier of man’s destiny may well lie within his genes, and this is an exciting time in which to live.

We also understand more about the human brain than ever before, although we are still far from comprehending the vast complexities of human thought. The biochemical bases of many life processes continue to fascinate scientists. Our knowledge is surely increasing at a rate unimagined by our predecessors.

In this course, we will examine various body systems. We will consider various nutrients and their impact on health. We will also look at the human body's defenses against disease, as well as what happens when they go awry.

We will discuss human growth, development, and reproduction—processes controlled by hormonal and external stimuli in a very tightly regulated series of biochemical interactions. The brain and nervous system will constitute a large portion of our studies as well.

Human evolution and ecology will make up the last part of our course. Where we believe ourselves to have come from (according to current data) and where we are headed are fascinating subjects that have sparked (and will continue to spark) discussions and debates. Our interpretations of these may change depending on newly available data and analyses.

This course consists of five modules. Each module summarizes and expounds upon the major topics and chapters of the textbook. We will go into more detail in some areas, and will provide some interactive features to enable you to practice your newfound skills and test your knowledge. We have included questions, exercises, and labeling activities to reinforce the main objectives.

This course includes the following modules:
Module 1: Biology: A Human Perspective
Module 2: Metabolism, Nutrition, Digestion, and the Digestive System
Module 3: Blood and the Immune, Lymphatic, and Cardiovascular Systems
Module 4: Human Growth and Development
Module 5: Movement, Coordination, Control, and Human Evolution

Note: This course is identified as a prerequisite for another course at UMUC. Successful completion of this course is required to advance to the next course in a sequence. A grade of Withdrawal (W), Failure for non-attendance (FN), Failure (F) or Incomplete (I) will not meet a prerequisite requirement. You may be barred from enrolling in or may be removed from courses for which you do not have the necessary prerequisites. Keep track of your progress in this course. If you are uncertain about your standing, consult with your instructor. You should also work with an academic advisor to be sure you are aware of your options and are meeting all necessary program requirements when planning your schedule.

Course Outcomes

After completing this course, you should be able to

• use knowledge of biological principles and the scientific method to ask and answer relevant questions about the human body
• recognize and explain how external and internal factors influence the stability of human body processes
• use scientific findings to characterize structure and function of the healthy human body
• weigh and make health-related decisions based on an understanding of the value and limits of scientific knowledge and the scientific method

Course Materials

Click to access your course materials information (http://webapps.umuc.edu/UgcmBook/BPage.cfm?C=BIOL%20160&S=7982&Sem=2172)

Grading Information

This course consists of the following graded items:

<table>
<thead>
<tr>
<th>Graded Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignment 1: Trace the scientific method in a primary research article</td>
<td>15%</td>
</tr>
<tr>
<td>Quizzes (10% each)</td>
<td>20%</td>
</tr>
<tr>
<td>Written assignment 2: Informational Booklet</td>
<td>20%</td>
</tr>
<tr>
<td>Discussion participation (2.5%/week)</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Extra Credit Policy

There is no extra credit work in this course.
Late Submission Policy

1. Quizzes and written assignments: Ten percent (10%) of your grade will be subtracted for each day an assignment is late.

2. Discussions: If you do not participate in the discussions by the due date, you will earn 0% for participation in the missed week.

3. Final Exam: If you do not submit your final exam within the 48-hour window (note that you will have 5 hours to complete the exam once you open it within the 48-hour window), you will earn 0 (no exceptions!).

4. No work will be accepted after the official end of the class.

Deadlines

*Deadlines are strictly observed.* Illness, death, family emergencies, and TDYs (for military members) are part of our lives, and if they occur during the course you will not be penalized for them. It is your responsibility to keep your instructor informed about a problem that will *interfere* with your ability to concentrate and participate in the course. In most cases, some sort of accommodation can be reached that will allow you to continue and complete the course, but your instructor must know what is going on *before any deadlines are reached* let alone exceeded. You can always contact me by e-mail, provide appropriate documentation that confirms the emergency, and we can work something out.

It is your responsibility to ensure uninterrupted internet access and determine strategy to deal with occasional internet connection failure. Many public places such as restaurants, cafes and libraries have free internet access. **Lack of internet access is not a valid excuse for missing and/or late work.**

Discussion Participation

By registering for a Web-based course, you have made a commitment to participate in your course discussions as well as other online activities. Please plan to participate regularly. Participation for this course is defined as proactive involvement in weekly discussion questions. This requires you to actively reflect on weekly module and textbook readings and to develop original ideas in your responses. You are expected to demonstrate critical thinking and your understanding of the content in the assigned readings as they relate to the issues identified in the discussions. You are expected to make your own contribution in a main topic as well as respond with value-added comments to at least two of your classmates. You are encouraged to respond to other students as well as to your instructor. You will note in the grading policy that your online conference participation counts significantly toward your final grade.

You are expected to adhere to the general rules of online etiquette. It’s important to follow the guidelines of proper online etiquette to ensure good communication between you, your classmates and your instructors. Keep the five online etiquette tips below in mind during your online course:

- ii. **Respect.** Whether the class is online or on-site, respect is essential. It allows all involved parties to focus on the objective and prevents distracting disagreements. Be sure to use a polite tone, read before responding and be constructive with your criticism. It’s important to treat all online interactions the same as face-to-face interactions.

- iii. **Use Proper Formatting, Punctuation and Grammar.** The same rules of English apply in the online classroom setting. Capitalize letters when necessary, use appropriate punctuation and avoid using slang and abbreviations. You’ll not only make your posts easier to read; you’ll demonstrate your professionalism and personal value.

- iv. **Be Careful.** Because tone is difficult to convey online, sarcasm or humor can easily be misinterpreted. Though you may be tempted to joke around with your classmates, something written for a laugh may offend others. If you are unsure whether your message will be misconstrued, consider using an emoticon to lighten the tone.

- v. **Go to Your Instructor First.** If you have a disagreement or issue with a fellow classmate, go to your instructor before the situation escalates. It’s best to make your instructor aware of the situation before it affects the classroom dynamics or the way you engage with your peers.
vi. Stay on Topic, and Keep it Brief. Online classes require a lot of reading, and when responding, it may be difficult to decide where to start. Focus your comments into short topics to keep the conversation flowing. Avoid being too wordy, and instead say what you need to say without veering off topic.

To receive full credit for weekly participation, you must:

- Participate individually with meaningful and original comments in the posted discussion topics. (See Academic Policies for information about plagiarism.) A minimum of 3 posts per week is required. Your posts should be written in your own words and should be about 100 to 150 words long. Proper citation of sources (APA style) used for your responses is expected.
- The due date for weekly discussion(s) is every Sunday at 11:59 eastern time (ET).
- Cite properly and consistently and include all sources used for your responses.

Do not put off your class work until the end of the week. The deadline for classroom participation is 11:59pm ET on the due date unless stated otherwise. You must participate in the classroom discussions before the stated deadline to receive credit.

See the Conference Discussion Grading Rubric for details on posting content to the Discussions.

What is “good” participation?

For discussion participation, what matters here is the quality of your responses, not quantity. Here are some examples of good responses:

"Mary, you mentioned in your answer that human cloning is currently being investigated. In your research did you see any companies that were actually doing human cloning? I did not think that human cloning even a possibility in our lifetime. I think the government should regulate cloning practices of all animals to make sure that the science is not being used in a harmful or unethical way."

Another example:

"Joe, I really enjoyed reading your paper. I like the way that you formatted it, using pictures and tables to support your facts. The table you included about the increase in Flu deaths was very interesting - I did not realize that so many people die in other countries from something as simple as the flu!"

Your responses may include an observation, a counterexample, a suggestion, a statement of respectful disagreement, a solution, a question about the material or the process, an insight, an admission, an assent, an example, an idea, a corroboration, or a speculation. Remember to include your sources of information (if applicable)!

Here are some examples of inadequate responses/participation: "Good job, I liked your answers!" or, "Joe - I liked your paper very much!" or, "I agree!"

Any response that is intimidating, disrespectful, belittling and/or demeaning will not be tolerated and will be deleted.

---

### Project Descriptions

#### Written Assignment 1: Trace the Scientific Method in a Primary Research Scientific Article

Addresses course outcomes 1 and 4:

- use knowledge of biological principles and the scientific method to ask and answer relevant questions about the human body
- weigh and make health-related decisions based on an understanding of the value and limits of scientific knowledge and the scientific method

Before attempting this assignment, you might want to revisit the Scientific Method Tutorial in the Science Learning Center under the Course Content area.

Process:
Substance in Green Tea Inhibits Inflammatory Breast Cancer Cells

Inflammatory breast cancer (IBC) is a rare and often fatal form of breast cancer. In IBC, lymphatic vessels in the skin are blocked causing the breasts to appear swollen and red. Early in the disease process, patients with IBC usually do not have the classic “lump” in their breast; therefore the disease is frequently diagnosed at later stages. Diagnosis is often so delayed that the cancer has metastasized and patient prognosis is poor.

The underlying cause of IBC is unknown, but it is believed that like with other cancers certain cell types have the ability to transform into cells that can form malignant tumors. These aberrant cells are considered cancer stem cells, and populations of cancer stem cells have been identified in IBC.

In a recent study, researchers evaluated whether a metabolite found in green tea could inhibit the growth of certain stem cell types that have been identified in the breast tissue of patients with IBC. In this study, two IBC stem cell types, SUM-149 and SUM-190, were exposed epigallocatechin-3-gallate (EGCG- is a potent antioxidant found in green tea). Results from the study showed that EGCG treatment inhibited the growth, spread, and survival of the two stem cell types.

For the following questions, please refer to the original paper. The link to the paper is: http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0073464&representation=PDF

1. What is the overall hypothesis of this experiment? (Reminder: a hypothesis is a statement that can be tested).
2. In the Materials and Methods section of the paper, the authors discuss the cell culture and treatment conditions. What was the control group treated with in this section (make sure to look only at the Cell Culture and Treatment section of the paper)? Why?
3. Again, looking only at the Cell Culture and Treatment section, what was the experimental group treated with? Why?
4. In the Results section of the paper, the authors clearly summarize their multiple findings. In the "EGCG Reduces Growth of Pre-existing Tumors Derived from SUM-149 Stem-like Cells" results sub-section, the authors report a specific finding. What specific result do the researchers report?
5. Did the researchers follow the scientific method in their experimental design? Explain.
6. Based on the results, was the hypothesis supported, and what can you conclude from this experiment?


Written Assignment 2: Informational Booklet

Addresses course outcome 4:

- weigh and make health-related decisions based on an understanding of the value and limits of scientific knowledge and the scientific method

Choose and research a topic related to human biology. Imagine that you are creating a small booklet that will become available at a local health clinic. The booklet should be educational and understandable by the general public. You may select one topic that relates to either homeostatic mechanisms or to a disease that may interest you because of your own health or family history. You will find a list of suggested topics below, or you may come up with your own. If you select a topic that is not listed below, discuss your topic with your instructor before beginning work.

Suggested topics
• **Homeostasis**: Hydration and exercise, adaptation of the human body to pregnancy, adaptation to cold or hot weather, adaptation to starvation and its consequences, sleep and health, or nutrition and health in children.

• **Diseases**: diabetes, heart disease, hypertension, sickle cell anemia, Huntington's disease, colon cancer, macular degeneration, hemophilia, Parkinson's disease, osteoporosis, muscular dystrophy, or hepatitis.

**Assignment criteria**

1. Select one of the suggested topics above (you may also choose a topic not listed above).
2. Find articles related to the topic. You can find assistance with searching for articles at the UMUC Library Subject Guides at [http://libguides.umuc.edu/science](http://libguides.umuc.edu/science).
3. Remember that this is a booklet. Write 3-4 pages (double-spaced), excluding references. You may include pictures, tables and other material but please include all references. You should cite information in the text from at least five sources (including books, journals, and the Internet). You may not use online encyclopedias as a source more than once. Use APA style for citing references (see [http://www.umuc.edu/library/guides/apa.html](http://www.umuc.edu/library/guides/apa.html)). All source material should be paraphrased or summarized in your own words. You should have no more than one direct short quote (less than 40 words) and no long quotes (more than 40 words) in your booklet.
4. The sections of your booklet should include a title; an introduction that defines/describes your topic and what current/ongoing research has discovered about this topic; background information on what healthy organ system(s) is/are affected by the topic; the mechanism of action (e.g., how does the topic disrupt homeostasis? how does a disease spread and infect a person?); its symptoms and how it is diagnosed; current treatment options; and your references. You may include additional sections as necessary to cover your particular topic.
5. Please keep in mind that the audience for your informational booklet is the general public. Your explanations and uses of evidence, illustrations, or other definitive details should be appropriate for the reader; your language should aid the reader's understanding of the subject (including definitions where appropriate); you should use information logically, and provide conflicting evidence and research where appropriate.

Guidance on how to avoid plagiarism can be found at the following sites:

- [UMUC’s Effective Writing Program](http://www.umuc.edu/library/guides/apa.html): "Helping Students Avoid Plagiarism"
- [UMUC’s Online Writing Center](http://www.umuc.edu/library/guides/apa.html): "How to Avoid Plagiarism"
- [Indiana University's Writing Tutorial Services](http://www.umuc.edu/library/guides/apa.html): "Plagiarism: What It is and How to Recognize and Avoid It"

You may find very useful the [Effective Writing Center](http://www.umuc.edu/library/guides/apa.html) (EWC) for feedback in writing your paper. You may send your paper to the EWC using a [Request for Writing Help form](http://www.umuc.edu/library/guides/apa.html) to receive feedback from an EWC advisor. For more information please see the [Student Resource Page](http://www.umuc.edu/library/guides/apa.html) with links to information on writing assignments, organizing ideas, evaluating resources, avoiding grammar mistakes, and other writing issues. You will need at least 48 hours for a response from the EWC and that paper submissions are capped for each day; plan to submit your paper as early as possible.

**Quizzes**

Two quizzes will be assigned during the course. They will be posted on Monday at 00:01 am and due on Sunday at 11:59 pm Eastern Time (US). See Course Schedule for dates. Each quiz is worth 10% of the final grade.

**Final Examination (Timed)**

*Addresses Course Outcome #1, #2, #3, and #4*

- Use knowledge of biological principles and the scientific method to ask and answer relevant questions about the human body.
- Recognize and explain how external and internal factors influence the stability of human body processes.
- Use scientific findings to characterize structure and function of the healthy human body.
- Weigh and make health-related decisions based on an understanding of the value and limits of scientific knowledge and the scientific method.

The final examination will be an unproctored timed final exam. The final exam will be provided by your instructor on Friday 5/4 at
00:01 am US Eastern Time Zone. This final exam document will be made available to you for 48 hours. Once you open the exam you will have 5 (FIVE) hours to complete it. Keep in mind that the exam is due on Saturday 5/5 at 11:59 pm Eastern Time Zone. ONLY exams submitted through the online (D2L/LEO) classroom will be accepted. The final exam may consist of multiple choice, fill-in-the-blank, short answer, and essay questions.

If you do not complete (remember you have 5 hours) and submit your final exam within the 48-hour window, you will earn 0 (no exceptions!).

---

**Academic Policies**

**Academic Policies and Guidelines**

**ACADEMIC INTEGRITY**

As a member of the University of Maryland University College (UMUC) academic community that honors integrity and respect for others you are expected to maintain a high level of personal integrity in your academic work at all times. Your work should be original and must not be reused in other courses.

**CLASSROOM CIVILITY**

Students are expected to work together cooperatively, and treat fellow students and faculty with respect, showing professionalism and courtesy in all interactions. Please review the Code of Civility for more guidance on interacting in UMUC classrooms: [https://www.umuc.edu/students/support/studentlife/conduct/code.cfm](https://www.umuc.edu/students/support/studentlife/conduct/code.cfm).

**POLICIES AND PROCEDURES**

UMUC is committed to ensuring that all individuals are treated equally according to Policy 040.30 [Affirmative Action, Equal Opportunity, and Sexual Harassment](https://www.umuc.edu/policies/adminpolicies/admin04030.cfm).

Students with disabilities who need accommodations in a course are encouraged to contact the Office of Accessibility Services (OAS) at accessibilityservices@umuc.edu, or call 800-888-UMUC (8682) or 240-684-2287.

The following academic policies and procedures apply to this course and your studies at UMUC.

<table>
<thead>
<tr>
<th>Policy Code</th>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>150.25</td>
<td>Academic Dishonesty and Plagiarism</td>
<td><a href="https://www.umuc.edu/policies/academicpolicies/aa15025.cfm">https://www.umuc.edu/policies/academicpolicies/aa15025.cfm</a></td>
</tr>
<tr>
<td></td>
<td>- UMUC defines academic dishonesty as the failure to maintain academic integrity. All charges of academic dishonesty will be brought in accordance with this Policy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Note: Your instructor may use Turnitin.com, an educational tool that helps identify and prevent plagiarism from Internet resources, by requiring you to submit assignments electronically. To learn more about the tool and options regarding the storage of your assignment in the Turnitin database go to: <a href="https://www.umuc.edu/library/libresources/turnitin.cfm">https://www.umuc.edu/library/libresources/turnitin.cfm</a>.</td>
<td></td>
</tr>
<tr>
<td>151.00</td>
<td>Code of Student Conduct</td>
<td><a href="https://www.umuc.edu/policies/studentpolicies/stud15100.cfm">https://www.umuc.edu/policies/studentpolicies/stud15100.cfm</a></td>
</tr>
<tr>
<td>170.40</td>
<td>The following policies describe the requirements for the award of each degree:</td>
<td></td>
</tr>
<tr>
<td>170.41</td>
<td>Degree Completion Requirements for the Graduate School</td>
<td><a href="https://www.umuc.edu/policies/academicpolicies/aa17040.cfm">https://www.umuc.edu/policies/academicpolicies/aa17040.cfm</a></td>
</tr>
<tr>
<td>170.42</td>
<td>Degree Completion Requirements for a Bachelor’s Degree</td>
<td><a href="https://www.umuc.edu/policies/academicpolicies/aa17041.cfm">https://www.umuc.edu/policies/academicpolicies/aa17041.cfm</a></td>
</tr>
<tr>
<td></td>
<td>Degree Completion Requirements for an Associate’s Degree</td>
<td><a href="https://www.umuc.edu/policies/academicpolicies/aa17042.cfm">https://www.umuc.edu/policies/academicpolicies/aa17042.cfm</a></td>
</tr>
</tbody>
</table>
170.71 Policy on Grade of Incomplete - The grade of I is exceptional and only considered for students who have completed 60% of their coursework with a grade of B or better for graduate courses or C or better for undergraduate courses and request an I before the end of the term.

170.72 Course Withdrawal Policy - Students must follow drop and withdrawal procedures and deadlines available at https://www.umuc.edu/ under Academic Calendar.

130.80 Procedures for Review of Alleged Arbitrary and Capricious Grading - appeals may be made on final course grades as described herein.

205.06 Calculation Of Grade-Point Average (GPA) for Inclusion on Transcripts and Transcript Requests - Note: Undergraduate and Graduate Schools have different Grading Policies (i.e. The Graduate School does not award the grade of D). See Course Syllabus for Grading Policies.

GRADING

According to UMUC’s grading policy, the following marks are used:

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>59 or below</td>
</tr>
<tr>
<td>FN</td>
<td>Failure-Non attendance</td>
</tr>
<tr>
<td>G</td>
<td>Grade Pending</td>
</tr>
<tr>
<td>P</td>
<td>Passing</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>U</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>AU</td>
<td>Audit</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew</td>
</tr>
</tbody>
</table>

* The grade of “B” represents the benchmark for The Graduate School. Students must maintain a Grade Point Average (GPA) of 3.0 or higher. Classes where final grade of C or F places a student on Academic Probation must be repeated.
** The Graduate School does not award the grade of D.

COURSE EVALUATION SURVEY

UMUC values its students’ feedback. You will be asked to complete an online evaluation toward the end of the term. The primary purpose of this evaluation process is to assess the effectiveness of classroom instruction in order to provide the best learning experience possible and make continuous improvements to every class. Responses are kept confidential. Please take full advantage of this opportunity to provide your feedback.

LIBRARY SUPPORT
Extensive library resources and services are available online, 24 hours a day, seven days a week at https://www.umuc.edu/library/index.cfm to support you in your studies. The UMUC Library provides research assistance in creating search strategies, selecting relevant databases, and evaluating and citing resources in a variety of formats via its Ask a Librarian service at https://www.umuc.edu/library/libask/index.cfm.

LEARNING MANAGEMENT SYSTEM SUPPORT

To successfully navigate the online classroom new students are encouraged to view the Classroom Walkthrough under Help in the upper right menu of the LEO classroom. Those requiring technical assistance can access Help@UMUC Support directly in LEO under the Help menu. Additional technical support is available 24 hours a day, seven days a week via self-help and live chat at https://www.umuc.edu/help or by phone toll-free at 888-360-UMUC (8682).

SYLLABUS CHANGES

All items on this syllabus are subject to change at the discretion of the Instructor and the Office of Academic Affairs.

Class & Assignment Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Readings/Assignment(s)</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 0</td>
<td>Your course has three required electronic resources:</td>
<td>3/12</td>
</tr>
<tr>
<td></td>
<td>• Anatomy and Physiology ebook</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Concepts of Biology ebook</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• BIOL 160 Course Modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To find your ebooks, go to Table of Contents &gt; Course Resources &gt; eReadings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To find your Course Modules, go to Table of Contents &gt; Course Resources</td>
<td></td>
</tr>
</tbody>
</table>
Week 1

Read:
- Anatomy and Physiology ebook
  - Chapter 1 – An Introduction to the Human Body
  - Chapter 2 – The Chemical Level of Organization
  - Chapter 3 – The Cellular Level of Organization
  - Chapter 4 – The Tissue Level of Organization

- Modules
  - 1: Scientific Method, Homeostasis, Chemical Basis of Life, The Cell and its Organelles
  - 2: Energy and Metabolism

Do:
- Week 1 discussions
- Introduction
- Final Examination Acknowledgement
- APA Tutorial certification

Concepts:
- homeostasis
- scientific method
- metabolic pathways
- (bio)chemistry
- health
- cell systems

Skills:
- identifying components of scientific method used
- asking relevant questions
- communicating facts
<table>
<thead>
<tr>
<th>Week 2</th>
<th>Read:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Anatomy and Physiology ebook</td>
</tr>
<tr>
<td></td>
<td>• Chapter 5 – The Integumentary System</td>
</tr>
<tr>
<td></td>
<td>• Chapter 23 – The Digestive System</td>
</tr>
<tr>
<td></td>
<td>• Chapter 24 – Metabolism and Nutrition</td>
</tr>
<tr>
<td></td>
<td>• Modules</td>
</tr>
<tr>
<td></td>
<td>• 1: Tissue</td>
</tr>
<tr>
<td></td>
<td>• 2: Nutrition and Digestive System</td>
</tr>
<tr>
<td></td>
<td>Do:</td>
</tr>
<tr>
<td></td>
<td>• Short paper: trace scientific method through a scientific article/paper(submit into your assignment folder)</td>
</tr>
<tr>
<td></td>
<td>• Week 2 discussions</td>
</tr>
<tr>
<td></td>
<td>Concepts:</td>
</tr>
<tr>
<td></td>
<td>• homeostasis</td>
</tr>
<tr>
<td></td>
<td>• human structure and function</td>
</tr>
<tr>
<td></td>
<td>• physical and chemical environmental factors</td>
</tr>
<tr>
<td></td>
<td>• organ systems</td>
</tr>
<tr>
<td></td>
<td>• integumentary</td>
</tr>
<tr>
<td></td>
<td>• prevention</td>
</tr>
<tr>
<td></td>
<td>• relation between structure and function</td>
</tr>
<tr>
<td></td>
<td>• disease and dysfunction</td>
</tr>
<tr>
<td></td>
<td>• trauma</td>
</tr>
<tr>
<td></td>
<td>• diagnostic procedures (using technology)</td>
</tr>
<tr>
<td></td>
<td>• instrumentation and technology</td>
</tr>
<tr>
<td></td>
<td>• limits of science</td>
</tr>
<tr>
<td></td>
<td>Skills:</td>
</tr>
<tr>
<td></td>
<td>• critical thinking</td>
</tr>
<tr>
<td></td>
<td>• recognizing external and internal factors</td>
</tr>
<tr>
<td></td>
<td>• interpreting scientific data reference levels (healthy range)</td>
</tr>
</tbody>
</table>
### Week 3

**Read:**
- Anatomy and Physiology ebook:
  - Chapter 18 – The Cardiovascular System: Blood
  - Chapter 19 – The Cardiovascular System: The Heart
  - Chapter 20 – The Cardiovascular System: Blood Vessels and Circulation
  - Chapter 21 – Lymphatics and the Immune System

- Modules
  - 3: Blood, Lymphatic system, and Circulatory System

**Do:**
- Week 3 discussions
- Complete Quiz 1

**Concepts:**
- homeostasis
- human structure and function
- physical and chemical environmental factors
- organ systems
- microbiology

### Week 4

**Read:**
- Anatomy and Physiology ebook:
  - Chapter 12 – The Nervous System and Nervous Tissue
  - Chapter 13 – Anatomy of the Nervous System
  - Chapter 14 – The Brain and Cranial Nerves
  - Chapter 17 – The Endocrine System

- Modules
  - 5: The Nervous System and Muscles and Skeletal System

**Do:**
- Week 4 discussions

**Concepts**
- homeostasis
- human structure and function
- physical and chemical environmental factors
- organ systems
- nutrition: availability and choice
- microbiology
- stress and hormones (endocrine, nervous)
### Week 5

**Read:**
- Anatomy and Physiology ebook:  
  - Chapter 6 – Bone Tissue and the Skeletal System  
  - Chapter 10 – Muscle Tissue  
  - Chapter 11 – The Muscular System  
  - Chapter 22 – The Respiratory System  
  - Chapter 25 - The Urinary System  
- Modules  
  - 5: The Nervous System and Muscles and Skeletal System

**Do:**
- Week 5 discussions  
- Send a draft of your Informational Booklet to the Effective Writing Center for feedback (recommended).

**Concepts**
- homeostasis  
- human structure and function  
- physical and chemical environmental factors  
- organ systems  
- microbiology (circulatory, blood; immune)

**Skills**
- PowerPoint or alternative  
- Presentation design (conceptually)

### Week 6

**Read:**
- Anatomy and Physiology ebook:  
  - Chapter 27 – The Reproductive System  
  - Chapter 28 - Development and Inheritance

- Modules  
  - 4: DNA and Human Genetics, Human Reproduction

**Do:**
- Week 6 discussions  
- Complete Quiz 2

**Concepts**
- homeostasis  
- human structure and function  
- physical and chemical environmental factors  
- organ systems  
- growth and development  
- genetics  
- microbiology

**Skills**
- information literacy/research skills  
- citation
### Week 7
**Read:**
- **Concepts of Biology**
  - Chapter 11 – Evolution and its Processes
  - Chapters 19, 20 – Ecology

- **Modules**
  - 5: Human Evolution

**Do:**
- Week 7 discussions
- Submit completed Informational Booklet to your Assignments Folder and into designated discussion conference

**Concepts**
- homeostasis
- human structure and function
- physical and chemical environmental factors
- organ systems
- microbiology
- healthy
- limitations of science
- treatment

### Week 8
**Do:**
- Week 8 discussions - Informational Booklet
- The final examination will be an unproctored timed final exam. The final exam will be provided by your instructor on Friday 5/5 at 00:01 am US Eastern Time Zone. This final exam document will be made available to you for 48 hours. Once you open the exam you will have 5 (FIVE) hours to complete it. Keep in mind that the exam is due on Saturday 5/6 at 11:59 pm Eastern Time Zone. ONLY exams submitted through the online (D2L/LEO) classroom will be accepted. The final exam may consist of multiple choice, fill-in-the-blank, short answer, and essay questions.