

**ANATOMY & PHYSIOLOGY I**  
**Dr. William Hanna**

**BIOL201-H1**  
**Spring 2009**

**Onsite meetings:** Wed. 3:30-5:55 p.m. Room S-219 (Brockton)  
1/21, 2/4, 2/11, 2/25, 3/4, 3/11, 4/8, 4/22, 4/29, and 5/6

**Office hours:** Mon., Wed. and Fri. 9:00-10:00 a.m.  
(onsite) Thurs. 12:00-1:00 p.m., or by appointment

**Contact info:** e-mail: massasoit.bio@mac.com  
phone: (508) 588-9100 ext. 1626 (E-mail is strongly preferred.)  
fax: (508) 427-1231  
mail: Biology Dept., 1 Massasoit Blvd, Brockton, MA 02302  
office: S-220 (in the Science building; Brockton campus)

**Course websites:** <http://webct6.massasoit.mass.edu> (WebCT Campus Edition 6)  
<http://www.massasoit-bio.net/hybrid> (course content)

**Course description:**

This is the first part of a two-semester course that presents in a comprehensive manner the structure and function of the human body. Topics include tissues and the integumentary, skeletal, muscular, and nervous systems. A dissection component of the laboratory work is required for successful completion of the course. Three lecture hours; two laboratory hours.

**Prerequisites:**

Grade of C- or better in Biological Principles I (BIOL121) or successful performance on departmental challenge exam, and Preparing for College Reading II (ENGL092), Introductory Writing (ENGL099), and Fundamentals of Mathematics (MATH010), or waiver by placement testing results, or Departmental Approval. Anatomy and Physiology I (BIOL201) must be taken before Anatomy and Physiology II (BIOL202).

Both the lecture and laboratory components of this course are **considerably** more challenging than Biological Principles I. Furthermore, it is expected that you have remained familiar with many of the topics covered in Biological Principles I, such as atomic and molecular structure, properties of macromolecules, eukaryotic cell structure and function, plasma membrane dynamics, and energy transformations. These topics will be covered in Anatomy and Physiology I or II with little or no introduction; you are expected to rely on your past experience with them.

**Who should be taking this course?**

This course is intended for those students that are enrolled or intending to enroll in Massasoit's Allied Health program, an exercise physiology program, or a program affiliated with another health-related field. Students who plan on transferring to a four-year institution should be aware that this class may not fulfill requirements for a biology major at another school and should check with the school at which they are interested in applying.

This class is **NOT** intended for students wishing to complete their Massasoit requirement for either a lab science or a science elective. Such students are welcome to take this class (provided they meet the prerequisites), but will find that the material and out-of-class work is significantly more advanced than their previous science courses.

**Course materials (required; listed in order of importance):**

**1. Textbook:** Elaine Marieb & Katya Hoehn, *Human Anatomy and Physiology* (7<sup>th</sup> edition).  
Pearson/Benjamin Cummings. ISBN 0-8053-5910-9.

A new copy of the textbook includes many extras for free, such as access to MyA&P, CD-ROMs of both InterActive Physiology and Anatomy 360°, and an anatomy atlas. Considering this book is used for two semesters, this is a good deal. New textbook = Cheaper in the long run.

## 2. Bound notebook

This will be used as part of an ongoing lab notebook project. The best type of bound notebook is an artist's sketch book that can usually be found in the clearance section at places like Borders or Barnes and Noble, often for less than \$5.00. Otherwise, a standard composition book (black and white cover, found at any supermarket, convenience store or office supply store) will be acceptable.

## 4. High-speed internet connection (LAN, DSL, cable, etc.)

## 5. Working e-mail account

- 6. Lab Manual:** Elaine Marieb. *Lab Manual for Human Anatomy & Physiology (cat version)*. Pearson/Benjamin Cummings. ISBN 0-8053-7258-X. (A used copy of the Lab Manual is fine.)

### Additional course materials (not required, but strongly suggested):

- 1. Histology Atlas:** Dennis Strete, *A Color Atlas of Histology* (1<sup>st</sup> edition). HarperCollins.

This isn't required, but many students in both A&P1 and A&P2 have told me how helpful it is. You'll get a lot of use out of it.

- 2. Colored pencils:** For your lab notebook.

### Weekly lecture objectives:

! Each week when you visit the course website, you will be given a list of objectives that you need to complete within that week. These objectives will include readings from the textbook, online activities and animations, homework questions and an online quiz that you'll take at home through WebCT. If you fall behind, it will become difficult to catch up. We cover a tremendous amount of material in this course, and it can be overwhelming for the day students. Taking this course online can present a whole series of additional challenges.

### Reading the book:

! In the absence of the lecture environment, you have to rely on your textbook. Each week, I will assign specific readings from the book. During the day classes, we do not cover the material in as detailed a fashion as the book does, so you will notice that I will pick small sections throughout the book. You're certainly welcome to read each chapter from start to finish, but you won't be responsible for all of the material in each chapter.

### Online quizzes:

! Each week of material will be accompanied by a quiz that you will take in WebCT. You will have a week to take each quiz; they will close at 9:00 a.m. on the following Monday. These quizzes count as a maximum of 140 extra credit points towards your final grade.

### System Assignments:

! We will cover four body systems (integumentary, skeletal, muscular and nervous), as well as sections on tissues and articulations and an introduction to anatomy and physiology. Together, these seven areas will comprise our course of study this semester. For each of these areas, you have been given a packet of questions that you must answer and submit for a grade. The purpose of these System Assignments is to get you to practice answering the types of questions I ask and to give you an opportunity to research answers from the textbook and/or lab manual.

**Onsite meetings and labs:**

! We will meet together ten times during the semester. These meetings are mandatory and their dates are posted at the top of this document. We will use this time to complete lab activities and to take lecture and lab exams. Because we won't see each other very often, occasionally we'll fit multiple lab activities into a single lab. Therefore, it's very important that you do not miss these meetings.

! You have received a series of objectives for each lab. These objectives will outline what you are expected to accomplish during the assigned lab time and how you should focus your time before the next lab session. Occasionally, a lab activity will have a short lab handout that will be turned in for a grade. These will be short enough so that you can finish them and turn them in immediately. You cannot turn in a lab handout unless you have completed the lab activity.

! A great deal of the Anatomy & Physiology lab experience will be conducted on your own. As any of the day students will tell you, they spend lots of their own time in the lab, learning the bones and muscles or studying tissues under the microscope. This means that you will undoubtedly need to come in at different times to study the materials.

! During the course of this semester, we will use the 8<sup>th</sup> edition of Elaine Marieb's *Human Anatomy & Physiology Laboratory Manual (cat version)*. It contains the instructions for the labs that we'll do. I will not assign you homework out of the lab manual, and therefore I don't consider the lab manual a required purchase for everyone. At least one person in your lab group should have a copy for our onsite meetings. I think that students do benefit from having their own copy, but I don't consider it a necessity (like the textbook). Older editions of the lab manual are fine, but you may need to flip around for the correct section.

**Late assignments:**

Late assignments will not be accepted. If you are absent on the day an assignment is due, you must get it to me by 3:00 p.m. Friday of the week it is due, unless you've made an arrangement with me **in advance**.

Grading:

Your  
grade

Total #  
points

<b>System Assignments (300 pts)</b>		
Preview and Review		40
Tissues		50
Integumentary System		25
Skeletal System		50
Articulations		25
Muscle		50
Nervous System		60
<b>Lab Notebook</b>		
		200
<b>Sweat Gland Distribution Lab Report</b>		
		10
<b>PhysioEx Lab Report</b>		
		60
<b>Lecture Exams (750 pts total)</b>		
Exam 1		250
Exam 2		250
Exam 3		250
<b>Lab Exams (500 pts total)</b>		
Lab Exam 1		250
Lab Exam 2		250
<b>Online Quizzes (only accepted through WebCT; count towards extra credit points)</b>		
Week 1 Quiz: Introduction to Anatomy & Physiology		10
Week 2 Quiz: Tissues		10
Week 3 Quiz: Integumentary System		10
Week 4 Quiz: Introduction to Skeletal Tissues		10
Week 5 Quiz: The Axial Skeleton		10
Week 6 Quiz: The Appendicular Skeleton		10
Week 7 Quiz: Articulations		10
Week 8 Quiz: Introduction to Muscle Tissue		10
Week 9 Quiz: Muscle Contraction		10
Week 10 Quiz: Muscle Physiology		10
Week 11 Quiz: Introduction to Nervous Tissue		10
Week 12 Quiz: The Brain		10
Week 13 Quiz: The Spinal Cord & PNS		10
Week 14 Quiz: Autonomic Nervous System		10
<b>Final Exam</b>		
		400

<b>Your total</b>	<b>Total points</b>
	<b>2220</b>

A Above 2052  
A- 1987-2052  
B+ 1921-1986  
B 1832-1920

B- 1765-1831  
C+ 1699-1764  
C 1610-1698  
C- 1543-1609

D+ 1477-1542  
D 1388-1476  
D- 1321-1387  
F Below 1320

Your final grade in this course is a culmination of the work you complete throughout the semester. Final grades are non-negotiable and no extra credit assignments are accepted at the end of the semester in the event you are not happy with your grade.

**Attendance:**

Your attendance is expected at all onsite meetings. There are **no make-up lecture exams**. Your grade on your Final Exam will be substituted for one (1) missed lecture exam. If a serious illness or family emergency prevents you from taking a **lab** exam, please notify me **on or before** the day of the exam if possible, and documented proof of the reason for the absence must be presented if requested when you return to class. At that time, the problem will be dealt with on an individual basis. Failure to comply with these procedures will result in a grade of 0 for the missed lab exam.

**Academic integrity (from the College catalog):**

Students are responsible for maintaining the highest standards of academic honesty and integrity in this course. Violations of academic honesty will usually fall in one of two categories: cheating or plagiarism. Cheating includes, for example, copying or buying the work of others; hiring or persuading others to do work under a false name; concealing notes or other helpful materials during an exam; communicating with your classmates during an exam. Plagiarism is the use of another person's work or ideas as one's own without giving appropriate credit. In short, plagiarism is intellectual theft and is, therefore, taken seriously; consequently, using the ideas or language of others in an oral, written, technical, or artistic work must be properly acknowledged and documented. Students are responsible for understanding what constitutes plagiarism in their classes and should note that these offenses are often very easy for the instructor to catch. In this class, the penalty for cheating or plagiarism will be a grade of zero (0) for the work in question and possibly a failing grade for the course.

Please note that copying either text or drawings out of textbooks, course materials and websites is also prohibited. All work conducted in this course is to be yours and yours only!

**Safety notes:**

This course includes some dissection of preserved materials. Dissections in Anatomy and Physiology I include the sheep brain and cow eye. While we try to order materials in the safest preservatives available, it is not advisable for pregnant women to be present in the lab during dissections. **If you are pregnant or become pregnant during the course, please notify the instructor immediately.**

**Students with disabilities:**

Students with disabilities who believe that they may need accommodations in the classroom are encouraged to contact Andrea Henry (Disability Counselor for Learning Disability Services; ext. 1805) or Stan Oliver (Disability Counselor; ext. 1464) as soon as possible, in order to ensure that such accommodations are implemented in a timely fashion.

**Course outcomes:**

By the end of this course, you should be able to:

- Use the general steps of the scientific method to form hypotheses, collect and evaluate data, and draw conclusions, in order to learn to distinguish between science and pseudoscience, and to evaluate scientific information in both professional journals and the popular press.
- Use anatomical vocabulary correctly in order to be able to read and understand the text and laboratory instructions, and communicate effectively in a professional setting.
- Observe and describe differences in basic tissue types in order to be able to predict tissue and organ function based on structure.
- List the eleven organ systems, the organs they include, and their basic function, in order to carry out a systematic (as opposed to regional) study of the human body.
- Apply the basic principles of biology to the functions of cells and the plasma membrane in the human body in order to be able to predict the nature of processes involving membrane transport, receptors, surface area and energy, thus learning from understanding rather than memorization.
- Relate structure to the function of cells, tissues, and selected organs in order to demonstrate an understanding of the physiology of the integumentary, skeletal, muscular, and nervous systems.
- Describe the homeostatic condition and control systems for important variables in order to understand the nature of the "normal" or "healthy" condition. Describe the results of homeostatic imbalance of the same important variables in order to relate changes to the underlying causes of disease.
- Present and interpret data from charts and graphs in order to develop skills in using charts and graphs to convey information, to be able to read and understand professional journals and to understand data used in the workplace and presented at meetings and conferences.
- Communicate accurately and clearly both in writing and orally in order to educate patients (for students entering allied health fields) and communicate with professional colleagues.
- Work safely in the laboratory and follow simple laboratory protocols in order to work cooperatively to complete laboratory exercises and conduct experiments using the scientific method
- Use appropriate study skills to ensure success in the course
- To strengthen core competencies (including critical thinking, technology skills, oral communications, quantitative skills, reading and writing) in order to increase success in this and other courses and in the workplace.

<b>Week # (Week of)</b>	<b>Weekly course work (completed at home)</b>	<b>Onsite Activity Planned</b>	<b>What's due at onsite meeting?</b>
<b><u>Week 1</u> Jan. 18</b>	<b>Week 1 Objectives:</b> (Preview and Review) Send e-mail	Lab 1	Lab Safety Sheet (completed during lab)
<b><u>Week 2</u> Jan. 25</b>	<b>Week 2 Objectives:</b> (Tissues) Week 1 Quiz* Week 2 Quiz* Lab 2	<b><i>No onsite meeting this week</i></b>	
<b><u>Week 3</u> Feb. 1</b>	<b>Week 3 Objectives:</b> (Integumentary Sys.) Week 3 Quiz*	Lab 3	System Assignment: Preview and Review Rough draft of tissue ID key (Part 1 of Tissue System Assignment)
<b><u>Week 4</u> Feb. 8</b>	<b>Week 4 Objectives:</b> (Intro Skeletal Tissue) Week 4 Quiz*	Lab 4	Lab 4 Report (completed during lab) System Assignment: Integumentary System
<b><u>Week 5</u> Feb. 15</b>	<b>Week 5 Objectives:</b> (Axial Skeleton) Week 5 Quiz*	<b><i>No onsite meeting this week</i></b>	
<b><u>Week 6</u> Feb. 22</b>	<b>Week 6 Objectives:</b> (Append. Skeleton) Week 6 Quiz*	Lab 5 Lab 6	System Assignment: Tissues (incl. final tissue ID key)
<b><u>Week 7</u> Mar. 1</b>	<b>Week 7 Objectives:</b> (Articulations) Week 7 Quiz*	<b>Lecture Exam 1</b> Open lab time	System Assignment: Skeletal System Histology Notebook (optional; only for feedback)
<b><u>Week 8</u> Mar. 8</b>	<b>Week 8 Objectives:</b> (Intro Muscle Tissue) Week 8 Quiz*	<b>Lab Exam 1</b>	System Assignment: Articulations
<b>Mar. 15</b>	<b>No new material (Spring Break)</b>	<b><i>No onsite meeting this week</i></b>	
<b><u>Week 9</u> Mar. 22</b>	<b>Week 9 Objectives:</b> (Muscle Contraction) Week 9 Quiz*	<b><i>No onsite meeting this week</i></b>	
<b><u>Week 10</u> Mar. 29</b>	<b>Week 10 Objectives:</b> (Muscle Physiology) PhysioEx simulation Week 10 Quiz*	<b><i>No onsite meeting this week</i></b>	
<b><u>Week 11</u> Apr. 5</b>	<b>Week 11 Objectives:</b> (Intro Nerv. Tissue) Week 11 Quiz*	<b>Lecture Exam 2</b> Lab 7 Lab 8	System Assignment: Muscle PhysioEx simulation

<b>Week 12</b> <b>Apr. 12</b>	<input type="checkbox"/> <b>Week 12 Objectives:</b> (CNS – The Brain) <input type="checkbox"/> Week 12 Quiz*	<b>No onsite meeting this week</b>	
<b>Week 13</b> <b>Apr. 19</b>	<input type="checkbox"/> <b>Week 13 Objectives:</b> (CNS – Spinal Cord & PNS – Nerves) <input type="checkbox"/> Week 13 Quiz*	<input type="checkbox"/> Lab 10 <input type="checkbox"/> Lab 11	
<b>Week 14</b> <b>Apr. 26</b>	<input type="checkbox"/> <b>Week 14 Objectives:</b> (Autonomic Nerv. Sys.) <input type="checkbox"/> Week 14 Quiz*	<input type="checkbox"/> <b>Lecture Exam 3</b> <input type="checkbox"/> Open lab time	
<b>May 3</b>	<b>No new material:</b> <input type="checkbox"/> Review for Final Exam**	<input type="checkbox"/> <b>Lab Exam 2</b>	<input type="checkbox"/> System Assignment: Nervous System <input type="checkbox"/> Histology Notebook

***Histology Notebooks are due for a grade no later than May 6 (day of Lab Exam 2). No exceptions!***

***\* All weekly online quizzes must be completed by 9:00 a.m. of the following Monday.***

***\*\*Final exam will be held at 3:30 p.m., Wednesday, May 13.***