

**California State University, San Marcos General Education Program  
GENERAL EDUCATION NEW COURSE CERTIFICATION REQUEST**

**• AREA B2/B3: Life Science with a Lab Component**  
*See GE Handbook for information on each section of this form*

**ABSTRACT**

<b>Course Abbreviation and Number:</b> BIOL 175	<b>Course Title:</b> Introduction to Human Anatomy and Physiology for Pre-Nursing majors	
<b>Number of Units:</b> 4 _____		
<b>College or Program:</b> <input type="checkbox"/> CHABSS <input checked="" type="checkbox"/> CSM <input type="checkbox"/> CEHHS <input type="checkbox"/> COBA <input type="checkbox"/> Other _____	<b>Desired term of implementation:</b> <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer Year:	<b>Mode of Delivery:</b> <input checked="" type="checkbox"/> face to face <input checked="" type="checkbox"/> hybrid <input checked="" type="checkbox"/> fully on-line
<b>Course Proposer (please print):</b> Tracey Brown	<b>Email:</b> <a href="mailto:traceyb@csusm.edu">traceyb@csusm.edu</a>	<b>Submission Date:</b> 12/11/14

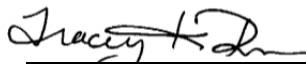
**1. Course Catalog Description:**


The first in a two-course series designed to introduce the principles of human anatomy and physiology for students in health and human services, including Nursing. Taught from a systems perspective where students will learn basic physiological principles and mechanisms along with their associated anatomical basis. Material includes anatomical terminology, cell and tissue structure and function, basic biochemical and metabolic pathways and the integumentary, skeletal, muscular, digestive and excretory systems. *Three hours of lecture and three hours of laboratory. Enrollment restricted to declared Pre-Nursing students. Students must obtain consent from the School of Nursing Advisor; consent will only be given to students who have completed the Lower-Division General Education requirements in areas A1, A2, A3, and B4.*

**2. GE Syllabus Checklist: The syllabi for all courses certified for GE credit must contain the following:**

<input checked="" type="checkbox"/>	Course description, course title and course number
<input checked="" type="checkbox"/>	Student learning outcomes for General Education Area and student learning objectives specific to your course, linked to how students will meet these objectives through course activities/experiences
<input checked="" type="checkbox"/>	Topics or subjects covered in the course
<input checked="" type="checkbox"/>	Registration conditions
<input checked="" type="checkbox"/>	Specifics relating to how assignments meet the writing requirement
<input checked="" type="checkbox"/>	Tentative course schedule including readings
<input checked="" type="checkbox"/>	Grading components including relative weight of assignments

**SIGNATURES**

 12/11/14  
Course Proposer Date

 12/11/14  
Department Chair date

*Please note that the department will be required to report assessment data to the GEC annually.* \_\_\_\_\_  
DC Initial

_____	Support	Do not support*	_____	Support	Do not support*
Library Faculty	<input type="checkbox"/>	<input type="checkbox"/>	Impacted	<input type="checkbox"/>	<input type="checkbox"/>
Date			Discipline Chair	Date	
_____	Support	Do not Support*	_____	Approve	Do not Approve
Impacted Discipline	<input type="checkbox"/>	<input type="checkbox"/>	GEC Chair	<input type="checkbox"/>	<input type="checkbox"/>
Chair			Date	Date	

**\* If the proposal is not supported, a memo describing the nature of the objection must be provided.**

Course Coordinator: Phone: Email:

From: Tracey Brown  
Sent: Thursday, December 11, 2014 4:57 PM  
To: Julie Jameson; Marshall Whittlesey  
Subject: Last ONes  
Attachments: BIOL\_175\_recert\_v3.pdf; BIOL\_177\_recert\_v3.pdf;  
BIOL\_211\_recert\_Robert.docx

Hi,

Here are the forms for BIOL 175/177 – this is essentially the same course but one is restricted to nursing majors and the other to kine – thus the forms are nearly identical

Also is the updated version of the BIOL 211 with the suggested changes from the librarian. I think Julie already has the signature page from Rob and I (but I have done the changing).

Hopefully this is the last of it!

Thanks,

Tracey

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From: Talitha Matlin <tmatlin@csusm.edu>  
Date: Monday, December 15, 2014 9:57 AM  
To: jjameson <jjameson@csusm.edu>  
Subject: Re: Last ONes

Hi Julie,

These all look good to me and have library sign-off.

Talitha

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**Part A: B2/B3 Life Science with Lab General Education Learning Outcomes (GELOs) related to course content.  
[Please type responses into the tables.]**

<b>Life Science w/ Lab GELOs this course will address:</b>	<b>Course content that addresses each GELO.</b>	<b>How will these GELOs be assessed?</b>
B2.1: Students will state or identify accepted modern biological principles and/or use knowledge of those principles to solve problems in the biological sciences.	The course establishes the foundation and fundamental principles of human anatomy and physiology. Basic premises such as the levels of organization of the human body beginning with the molecular level through to the organismal level, the complementarity of structure and function, anatomical and physiological terminology, directional terminology, and planes of section. Students must understand and define the universal anatomical position used in all fields of healthcare. These are covered in lecture and lab and through analysis of case studies.	Lecture exam questions will ask student to label a diagram indicating anatomical positions (posterior, anterior) or muscle movement (adduction, abduction). The will also be labeling organs, muscles, bones etc. and categorizing into organizational levels
B2.2: Students will describe and apply the discipline's primary methods to problems through hypothesis development, critical evaluation of evidence, data collection, fieldwork, and/or employment of mathematical and computer analysis.	The course defines and compares the different ways anatomical and physiological sciences are studied from conception through adulthood. Techniques studied and applied include different types of medical imaging, as well their appropriate uses and limitations. Other techniques including auscultation, blood analysis, spirometry, urinalysis, neurological testing, and an understanding the types of information these tests can yield to the examiner.	Laboratory experiments using PowerLabs with various medical attachments. Physical examination and testing such as reflexes and balance, surface and regional anatomy, and dissection. Assessed by student data acquisition and lab reports.
B2.3: Students will describe various theories relevant to the discipline.	Emphasis is placed on maintenance of homeostasis by integrating the roles organs play concept that a change in structure of an organ through a pathological mechanism will alter the organ's ability to function	An example lecture exam question would be asking them to describe the theory of muscle contraction from excitation to tension production
B2.4: Students will identify the limitations of scientific endeavors.	Technical aspects of Experimentation and observations as well as what types of information they yield are presented and compared in lecture and lab	An example would be asking the students to evaluate the research surrounding vitamin supplements. What has been tested and what might just be commercial fallacy
B2.5: Students will identify and consider the value systems and ethics associated with human inquiry.	Complexity and intricacy of human structure and physiology and –apply knowledge of anatomy and physiology to reinforce critical thinking skills and problem solving to human case studies.	Students will be evaluating case studies involving ethical treatment of patients and research animals.
B3.1 Students will demonstrate that they can conduct experiments, make observations, or run simulations using protocols and methods common in the scientific discipline in which the course is offered.	Students apply protocols to conduct laboratory experiments and observation. Observation includes dissection and study of structure at the microscopic level. Computer simulations are used to replace experiments that require advance surgery of laboratory animals.	Lab experiments include physiological responses to stimuli such as cold stress, exercise, changing body position, light levels and others.
B3.2 Students will be able to interpret the results of experiments,	Conduct experiments. Students collect data; analyze and graph data, make	Submitted lab reports that include written summaries of

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observations or simulations, understanding random and systematic errors associated with those activities, and making appropriate conclusions based on theories or models of the scientific discipline in which the course is offered.	conclusions and interpret meaning and explain application	their results, interpretations and conclusions.
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**Part B: General Education Learning Outcomes required of all GE courses related to course content:**

<b>GE Outcomes required of all Courses</b>	<b>Course content that addresses each GE outcome?</b>	<b>How will these GELOs be assessed?</b>
Students will communicate effectively in writing to various audiences. (writing)	Students will be using short and long written communication in both lecture quizzes and lab reports (6 to 8 per semester).	Students are graded on their ability to summarize observations, experiments and data interpretation in their written lab reports.
Students will think critically and analytically about an issue, idea or problem. (critical thinking)	Case studies and interactive computer programs are used to help students think critically, analyze, diagnose and speculate on prognoses.	Students will submit answers to questions about these case studies, including their own perspectives. They will also summarize the results of the comp. simulations
Students will find, evaluate and use information appropriate to the course and discipline. (Faculty are strongly encouraged to collaborate with their library faculty.)	Much of this course involves having students learn to distinguish between research supported theories and medicine vs. more popular science. Specifically they need to do so for their lab reports.	Part of their lab report paper grade is based on their ability to incorporate external references and studies, with proper citation style and usage.

**Part C: GE Programmatic Goals: The GE program aligns with CSUSM specific and LEAP Goals. All B2/B3 courses must meet at least one of the LEAP Goals.**

<b>GE Programmatic Goals</b>	<b>Course addresses this LEAP Goal:</b>
LEAP 1: Knowledge of Human Culture and the Physical and Natural World.	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 2: Intellectual and Practical Skills	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 3: Personal and Social Responsibility	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
LEAP 4: Integrative Learning	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
<b>CSUSM Specific Programmatic Goals</b>	<b>Course content that addresses the following CSUSM goals. Please explain, if applicable.</b>
CSUSM 1: Exposure to and critical thinking about issues of diversity.	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (please describe): <i>The principles of Human anatomy and physiology are shared by all people regardless of race, ethnicity. Adaptive variations of people living in certain environments are explained through the sciences of genetics and natural selection</i>
CSUSM 2: Exposure to and critical thinking about the interrelatedness of peoples in local, national, and global contexts.	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (please describe):

**Part D: Course requirements to be met by the instructor.**

<b>Course Requirements:</b>	<b>How will this requirement be met by the instructor?</b>
Course meets the All-University Writing requirement: A minimum of 2500 words of writing shall be required in 3+ unit courses.	Students submit several lab reports per semester. They are asked to analyze data, explain their results, write conclusions and explain how their experimental results apply to real-life situations.

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<p>Courses in the life sciences will take as their primary focus such concepts found in traditional life science disciplines (e.g., levels of organization of living systems, from molecules to ecosystems, structures and functions of living organisms, principles of genetics, patterns and theories of evolution, interactions of organisms with each other and their environment).</p>	<p>Anatomical studies are built upon understanding levels of organization from the molecular to the integrated whole organism. Techniques used to study each level and what information each contributes to an understanding of human anatomy and physiology, are defined, explored and put into practice through microscopic analysis, dissection, and physiological experimentation.</p>
<p>Courses will require students to develop an understanding of the core information sources and the literature of the science disciplines.</p>	<p>The work of early anatomists and physiologists is used to give students a sense of background and continuity to present day knowledge and techniques. Students will also learn to incorporate current scientific literature.</p>
<p>Courses will require students to think critically so that they are able to distinguish scientific arguments from pseudo-scientific myths or opinions.</p>	<p>Analysis of data and application of basic science to reach reasonable conclusions. Myths such as men having one less rib than women, etc. are debunked when students observe with their own eyes and hands human structure and function.</p>

**Biology 175: Fall 2014**  
**Introduction to Human Anatomy and Physiology I**

LECTURE: ACD 102, T/Th, 7:30-8:45 AM

Dr. Mary Dwyer

Office: Science Hall 2, Room 121

Phone: 858-519-4056

Office Hours: Monday & Wednesday, 7:00 AM - 7:30 AM or by appointment.

Email: [mhigby01@gmail.com](mailto:mhigby01@gmail.com)

LABORATORY: Science Hall 2, Room 142

Dr. Thomas J. Pillsworth, Jr. (Sections 1/2/4/5)

Office: TBD

Phone: 760-294-2666

Office Hours: TBD

Email: [tpillsw@csusm.edu](mailto:tpillsw@csusm.edu)

LABORATORY: Science Hall 2, Room 142

Thomas W. Pillsworth (Section 3)

Office: TBD

Phone: 760-715-6056

Email: [twpills@csusm.edu](mailto:twpills@csusm.edu)

**Required Textbook, Lab Manual, and Online Materials:** The following are available in the bookstore as a bundle (Value Pack) from the publisher. The textbook is **Visual Anatomy & Physiology by Martini and Lab Manual, Cat Version by Stephen N. Sarikas Plus MasteringA&P with eText -- Access Card Package**

**Online materials:** Your book value pack includes access to the Pearson website, and a link to online materials that corresponds to this course and to your textbook. You will need access to Mastering A&P for required laboratory simulations. In addition, Mastering A&P is a valuable tool to help reinforce the lecture material. For example, Mastering A&P includes muscle action animations, labeling exercises, flash cards, suggestions for studying A&P, games, and other interactive exercises that will help you learn the material.

**Be sure that you register at the beginning of the semester. Your course ID # for Mastering A&P is: MAPDWYER54310.**

**Required Additional Material:** Dissection kit (available in bookstore; must have by 27 October), thumb/flash drive to save your data.

**Course Description:** This course is the first in a series of two courses integrating human anatomy and physiology. In this course we will take a systems approach to understanding basic human structure and their respective functions. Material covered in this course includes basic anatomical terminology, basic biochemical and metabolic pathways, cell and tissue structure and function, and examination of the integumentary, skeletal, muscular, and nervous systems along with some references to pathology and diseases of those systems.

### GE LEARNING OUTCOMES

B2.1 Students will state or identify accepted modern biological principles and/or use knowledge of those principles to solve problems in the biological sciences.

B2.2 Students will describe and apply the discipline's primary methods to problems through hypothesis development, critical evaluation of evidence, data collection, fieldwork, and/or employment of mathematical and computer analysis.

B2.3 Students will describe various theories relevant to the discipline.

B2.4 Students will identify the limitations of scientific endeavors.

B2.5: Students will identify and consider the value systems and ethics associated with human inquiry

**Course Learning Outcomes:** Be able to demonstrate knowledge and understanding of some of the major human organ systems (the remainder to be covered in Anatomy and Physiology II) including:

- the basic working of the human cell
- anatomical, physiological, and directional terms and regions
- principles and use of the compound microscope
- identification and classification of the various human tissue types
- complete understanding of the gross and microscopic anatomy and physiology of the human integumentary system
- complete understanding of the microscopic and gross anatomy and physiology of the human skeletal system
- complete understanding of the microscopic and gross anatomy of the human skeletal system (including successful dissection of the cat skeletal system)
- complete understanding of the microscopic and gross anatomy of the human muscular system (including successful dissection of the cat peripheral nervous system)
- complete understanding of the microscopic and gross anatomy and physiology of the human central and peripheral nervous system

### Administrative information:

1. **Attendance policy:** It is critical to **your success** in this course that you attend class regularly, arrive on time, and pay attention in class. Attendance may be taken from time to time. In the lab, work throughout the entire period, even if you finish your lab assignment early—stay and study or review. ***We have kept unofficial data over the years and there is a VERY strong correlation between time spent in the lab and final grades. . If you skip lab without getting advance permission from the lab instructor, you will not receive credit for the homework, quiz, activity or lab report for the missed session. Missing more than 2 unexcused laboratory meetings may result in a decrease in grade, dismissal or failure.***

2. It is your responsibility to make sure that you are properly enrolled, and if you decide not to continue in the course, **you must officially drop**. If you stop attending class without officially dropping, the only choice I have is to assign you a letter grade of “F”.

3. **Turn off all cell phones and other electronic devices when in class and during the introductory part of each lab.** Laptops and tape recorders are acceptable.

4. Check your e-mail for announcements at least daily.

5. You must take all lecture and lab exams to pass the course.

### **Dates to Remember:**

**Add/drop period: August 25-Sept 08, 2014**

**Last day to drop class with no academic record: September 08**

**Drop period—“W” will appear on transcript: September 9-22.**

**Petition to drop the class after September 23—serious and compelling reasons only.**

### **Evaluation and Grading:**

Your grade will be based on the total number of points you earn. There are multiple opportunities to earn points. Throughout the semester, you will take about 10 quizzes worth 10 points each. Quizzes will be administered at the **beginning** of each lab session, and will be on the previous week’s **lecture material**. Evaluation of the laboratory part of the course will be based on lab reports, review sheets, and practical exams. When we do physiology experiments, you will write a lab report that will be due on the date given to you by your instructor.. Physiology lab write-ups are worth between 20-40 points depending on the amount and intensity of the material. The lab reports are to be submitted as hard copies, and **must be typed and stapled prior to coming to lab**. Laboratory Review Sheets will be worth a maximum of 10 points each.

### **These lab reports support the University Writing Requirement.**

There will be three lecture exams, and two laboratory practical exams. Each of these is worth 100 points.

Grades are assigned on a point basis as a percentage of the total number of points possible (e.g., number of points you earned on all assignments divided by the total number of points possible x 100).

### **Grading Scale:**

A: 100-90%

B: 89-80%

C: 79-70%

D: 69-60%



**What are practical examinations?** Practical exams consist of approximately 25 stations set up on the lab benches throughout the room. Each station will have an object to be identified, such as a structure on a microscope slide, a type of tissue, cell, bone(s), organs, muscles, blood vessels, nerves, etc. You will be asked to identify the structure and/or state its function. There will be four questions per station and you will have 1.5 minutes per station.

**Make up Exams:** There are **NO** make-up exams except if you have a serious and compelling reason for not being able to take an exam during the examination period. **NOTE: YOU MUST INFORM THE INSTRUCTOR AT LEAST ONE WEEK PRIOR TO THE EXAM DATE.** Bring a written or email explanation stating the reason for needing the make-up exam. **Lab practical exams cannot be made up.**

**Late Work:** Late lab reports or exercises will lose 10% of the total points possible per day late, and will not be accepted more than 5 days past the due date.

**Extra Credit:** There is **NO** extra credit.

### **Academic Honesty:**

Any form of cheating/plagiarism will not be tolerated. This includes lab reports as well as quizzes and exams. You must **not** copy verbatim from your textbook, lab manual, lab partner or any other source including the internet. You cannot “cut and paste” material from the internet into your lab report. All work must be in **YOUR OWN WORDS**. On all assignments, **DO YOUR OWN WORK**. Cheating (according to the above definitions) will result in an “F” on the assignment/test, and “F” in the course, and you will be dropped from the class, and may be expelled from the University. For more complete policy information, see the CSUSM catalog.

### **Students with Disabilities:**

Students with disabilities who require academic accommodations must present me with the appropriate documentation from the Office of Disabled Student Services (DSS, Craven Hall 4200; 750-4905, or TDD 750-4909) at the beginning of the semester. Please see me during my office hour so we can discuss how to accommodate your needs and sign the necessary paperwork.

### **How to be an A & P survivor:**

This course covers a great deal of interrelated material. It is imperative that you understand topics covered early in the course to be able to comprehend information presented later on. **Always attend class.** We cover so much material each session that missing class will put you behind. You cannot depend on reading the book or viewing the online notes in lieu of attending. **DO NOT FALL BEHIND. Never miss lab.** There will be no opportunity to make up lab material as all sections are full. Learning anatomical terms and

structures require constant REPITITION, REPITITION, REPITITION, and did I mention REPITITION. Due to the amount of material to be covered in this course, you are expected to **study extensively outside of class**. Study groups are HIGHLY encouraged.

Mastering A&P ([www.masteringaandp.com](http://www.masteringaandp.com)) is a powerful tool that will help you be successful in this course. Since we all have different strengths and learning styles, it is important that you find the best and most efficient way(s) to approach the material. Mastering A&P has got many features that present the material in different ways—visual, auditory, interactive, etc. Find the methods that work best for your learning style.

**MyEbook**: The e-book format allows you to access the textbook electronically so you don't have to carry the hard copy of the text around with you. If you want to study at Starbuck's, you can access your chapter information from your laptop or other mobile device. There is also a "search" function which allows you to find references to specific terms. For example, type in sternocleidomastoid and click "go". Your search will give you the chapter and page number, as well as show you a picture of all the pages that reference this muscle.

**PAL** stands for Practice Anatomy Lab. When you click on this feature you will be redirected to the PAL opening page. From there, click on "go to PAL 3.0 Website". Once at the site, you can choose from several categories such as cadaver, anatomical models, histology, cat dissection, and fetal pig dissection. Choose the appropriate category and the organ system you wish to study—very useful for muscles! Some structures have an icon of a video camera. Double-clicking the camera will play a video animation of the item. There is also a pronunciation guide—if you want to hear how a term is pronounced, click the speaker icon.

### Biology 175: Tentative Lecture Schedule (Fall 2014)

Date	Lecture Topic	Chapter
T 8/26	Introduction:	
R 8/28	Intro to A & P: Anatomical Studies, levels of organization; organ systems	Chapter 1
T 9/2	Intro to A & P: Homeostasis, body regions, directional terms, planes & sections	Chapter 1
R 9/4	Cells & Tissues: Cells & Membrane Transport	Chapter 3
T 9/9	Cells & Tissues: Cell Membrane Transport	Chapter 3
R 9/11	Cells & Tissues: Epithelia & Connective Tissue Proper	Chapter 4
T 9/16	Cells & Tissues: Covering and Lining Membranes	Chapter 4
R 9/18	Integumentary System:	Chapter 5
T 9/23	Skeletal System: Bone & Cartilage Histology	Chapter 6
R 9/25	Skeletal System: Axial Skeleton  Case Study #1: Skeletal System Focused Disease	Chapter 7
<b>T 9/30</b>	<b>Lecture Exam I</b>  <b>Body regions, organs systems, medical imaging, homeostasis, transport, epithelia &amp; integumentary system</b>	
R 10/2	Skeletal System: Axial / Appendicular Skeleton	Chapter 7
T 10/7	Skeletal System: Appendicular Skeleton	Chapter 7
R 10/9	Skeletal System: Joints & Movement	Chapter 8
T 10/14	Muscular System: Skeletal muscle organization; muscle histology/physiology;	Chapter 10
R 10/16	Muscular System: Skeletal muscle organization; muscle histology/physiology;  types and functions of muscle tissues (skeletal, cardiac, smooth).  Muscle metabolism	Chapter 10

T 10/21	Muscular System: Axial Muscles	Chapter 10
R 10/23	Muscular System: Axial muscles	Chapter 10
T 10/28	Muscular System: Appendicular muscles Case Study #2: Muscular System Focused Disease	Chapter 10
R 10/30	Muscular System: Finish	Chapter 10
T 11/4	Nervous System: Overview & Nervous Tissue	Chapter 11
R 11/6	Nervous System: Neurophysiology & Nervous Tissue.	Chapter 11
<b>T 11/11</b>	<b>Lecture Exam II: Bone &amp; Muscle</b>	
R 11/13	Nervous System: The Central Nervous System: Brain	Chapter 13
T 11/18	Nervous System: The Central Nervous System: Spinal Cord	Chapter 13
R 11/20	Nervous System: The Peripheral Nervous System: Spinal Nerves	Chapter 12
T 11/25	Nervous System: The Peripheral Nervous System: Spinal Nerves	Chapter 12
R 11/27	THANKSGIVING HOLIDAY	
T 12/2	Nervous System: The Autonomic Nervous System:	Chapter 14
R 12/4	Nervous System: Case Study #3: Nervous System Focused Disease	

**Lecture Exam # 3 (Nervous System): Tuesday, December 9; 7:00-9:00 AM**

## Biology 175 Lab Schedule

Date	Lab Topic & Materials	Assignments/Due
8/25&26	Introduction: <ul style="list-style-type: none"> <li>• Safety Briefing and Code of Conduct</li> <li>• Microscopes (Exercise #2.1-5; Exercise 3.2)               <ul style="list-style-type: none"> <li>○ Read Exercise 2; Exercise 3.2 BEFORE lab)</li> <li>○ CARE of Microscopes</li> <li>○ Components (see handout and lab manual)</li> <li>○ Operation (see handout and lab manual)</li> </ul> </li> </ul>	Laboratory Safety Form  Code of Conduct Form  Review Sheets #2
9/1&2	No Labs—Labor Day Holiday	Read and Understand Exercise #1  * Bring your textbook to the next lab meeting*
9/08&9	Body Organization and Terminology (Exercise #1.1-6) <ul style="list-style-type: none"> <li>• Body regions, anatomical names, directional terminology</li> <li>• Human Labeling Exercise (to be described by Instructor)</li> </ul> Organ Systems and Their Major Functions Overview (Exercise # 1.3); <ul style="list-style-type: none"> <li>• Learn organs and their general functions as well as what organ system they belong to.</li> </ul>	Review Sheet # 2  Work on review sheets #1 to be turned in the next lab meeting.  Print the Transport and Permeability Lab Report and bring to the next lab.
9/15&16	Transport & Permeability (Modifications of Exercise # 4) (Instructions provided by Instructor): <ul style="list-style-type: none"> <li>• Diffusion of dyes through agar gel</li> <li>• Effect of temperature on diffusion (observation)</li> <li>• Egg membrane osmosis</li> <li>• Effect of tonicity on RBCs</li> </ul>	Review Sheet # 1  Submit <i>typed, stapled</i> permeability/tonicity lab report at the next lab meeting.  Read and understand Exercise #5  Print Histology Micrograph w/ Legends file and bring to next lab (or have laptop, etc.)

9/22&23	<ul style="list-style-type: none"> <li>Exercise 5 Examine Histology slides (Box 1, # 1, 3, 4, 6, 7, 9, 10, 11, 12, 13). <i>**Microscopes and slide boxes are on reserve in the library if you do not have enough time during lab to complete this exercise.**</i></li> <li>Work on Tissue Lab drawing sheet (hand in next week with Review Sheet # 5 to receive full credit)</li> <li>Work on Review Sheet # 5</li> </ul>	<p><b>Transport and Permeability Lab Report.</b></p> <p>Read Exercise # 6, #7.</p> <p>Print Integument Micrographs and Legends file and bring to next lab (or have laptop, etc.)</p> <p>Print Integument Model and Legends file and bring to next lab (or have laptop, etc.)</p> <p>Print Compact Bone Model and Legends file and bring to next lab (or have laptop, etc.)</p>
9/29&9/30	<p>Exercise # 6</p> <ul style="list-style-type: none"> <li>Examine slides 7, 22, 23 in box #1).</li> <li>Study Integument models Exercise # 7</li> <li>Examine slides of cartilage types (Box 1, # 14) &amp; compact bone (Box 1 #17, and Box 2, #1 &amp; 2);</li> <li>Compact bone model.</li> </ul> <p>Exercise # 7- Axial Skeletal System</p>	<p><b>Review Sheet # 5 and Tissue Lab drawing sheet.</b></p> <p>Work on Review Sheets #6, #7.</p> <p>Read Exercise # 8</p> <p>Read Exercise # 9</p>
10/6&7	<p>Exercise # 7 (cont')</p> <p>Exercise # 8- Appendicular Skeletal System</p> <p>Appendicular Skeleton Marieb Ex 11</p>	<p><b>Review Sheet # 6, # 7.</b></p> <p>Work on review sheets # 8, # 9.</p>

10/13&14	<p>Exercise # 7 (cont'),</p> <p>Exercise # 8 (cont'),</p> <p>Exercise #9- Articulations</p>	<p><b>Review Sheet # 8, # 9</b></p> <p><b>STUDY FOR FIRST PRACTICAL EXAM</b></p>
10/20&21	<p><b>First Practical Lab Exam:</b> Body regions, organ systems, directional terminology, tissue histology, integument, axial &amp; appendicular skeleton and articulations.</p>	<p><b>Read Exercise #10, #11, #12, C2</b></p>
10/27&28	<p>Begin dissection of cat muscles (Exercise C2).</p> <p>Exercise # 10, Exercise #11, Exercise # 12, C2</p> <p>Model of Microscopic anatomy of muscle;</p> <p>Histology slides: #18, 19, 20 from slide box 1.</p> <p>Lab Tutor demonstration by Instructor (twitch, wave summation, tetanus, fatigue, etc).</p>	
11/ 3&4	<p>Exercise # 10, # 11, # 12 C2 Finish dissecting cat muscles; study human models.</p>	<p><b>Review Sheet # 10, # 11</b></p>
11/10&11	<p>No Labs: Veterans Day Observed</p>	<p><b>Work on Review Sheet # 12</b></p>
11/ 19&20	<p>Exercise #14, Exercise # 15</p> <ul style="list-style-type: none"> <li>• Histology slides of brain &amp; spinal cord—slide box 2: #s15-20;</li> <li>• Study models of axon terminal and model of cell body-axon.</li> </ul>	<p><b>Review Sheet # 12</b></p> <p>PhysioEx # 3 and Neurophysiology Lab Report</p>
11/24&25	<p>Brain, cranial nerves &amp; spinal cord:</p>	<p><b>Neurophysiology Lab Report</b></p>

	<ul style="list-style-type: none"> <li>• Dissect sheep brain (Ex # 15.3),</li> <li>• Study Models of human brain &amp; spinal cord.</li> </ul>	<p><b>(typed/stapled)</b></p> <p>Work on review sheet # 15</p> <p><b>STUDY FOR SECOND PRACTICAL EXAM</b></p>
12/1&23	<b>Second Practical Lab Exam: Muscular &amp; Nervous Systems</b>	<b>Review Sheet # 15</b>