

BIOH370 Syllabus Spring 2016

Human Anatomy and Physiology for Health Professions II

Course Information:

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General Course Information:

Human Anatomy and Physiology is a 4-credit lecture/laboratory combined, two-semester sequence course (BIOH 365 and BIOH 370). The lecture focuses primarily on physiological and functional processes whereas the laboratory portion of the class focuses on anatomical structure using prosected cadavers, simple physiological experiments and computer simulations. There is overlap between the lecture and laboratory components but based on the limited laboratory time, there will be times when lecture material and lab material do not overlap.

This course predominately serves students majoring in biology, pre-medical, pre-nursing, pre-physical therapy, other pre-health care professions and health and human performance.

The two-semester sequence is divided as follows:

BIOH 365	BIOH 370
Body Plan & Organization	Endocrine System
Homeostasis	Cardiovascular System
Chemistry & Cell Biology Review	Lymphatic System & Immunity
Histology	Respiratory System
Integumentary System	Digestive System
Skeletal System & Articulations	Metabolism
Muscular System	Urinary System
Nervous System	Fluid/Electrolytes & Acid/Base Balance
Special Senses	Reproductive System

Required Prerequisites:

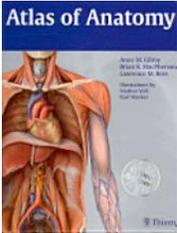
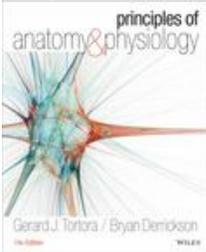
College Chemistry: CHMY 121N (CHEM 151N): Intro to General Chemistry -or- CHMY 141N (CHEM 161N): College Chemistry

College Biology: BIOL 110N (Principles of Biology) -or- BIOH 112 (Introduction to Human Form and Function I)-or- BIOH 113 (Introduction to Human Form and Function II).

A grade of C- or higher in BIOH365

**** You are at risk of not doing well in this course without the prerequisites.****
Recommended Prerequisites: BIOB 260: Cellular and Molecular Biology, BIOB272.

Required Textbook Information:



Principles of Anatomy and Physiology 14th edition by Gerard J. Tortora, Bryan H. Derrickson - John Wiley & Sons (2014) – ISBN 978- 1-118-34500-9 plus the Wiley Plus online package (available at the University of Montana Bookstore).

Atlas of Anatomy by Anne M. Gilroy, Brian R. MacPherson, Lawrence M. Ross - Thieme (2008) –ISBN-978-1-60404-062-1 or the 2nd edition of the Gilroy atlas or the electronic edition (available from www.thieme.com)

Computers and Course Website Information

Students are expected to be familiar with computers and the Internet. Students are responsible for their own software and computer equipment maintenance and setup as recommended by the University of Montana.

<http://umonline.umt.edu/student-support.php>

Class-Specific Computer Requirements:

- Students must download and complete *Terms to Know* and other assignments prior to laboratory sessions. Students are expected to have a ‘back up plan’ if personal computers become compromised.
- The University of Montana maintains several computer labs on campus:
<http://www.umt.edu/it/support/computerlabs/default.php>
- Students are expected to download copies of course information from the Moodle website and to check email for class announcements.
- **For technical support for using Moodle, please contact UM IT support:**

<http://www.umt.edu/it/support/default.php>

Course Goals:

Upon successful completion of this two-course sequence, you will have conceptual and practical information regarding the anatomy and physiology of the human organism.

Course Objectives:

- 1) Gain an appreciation for the complementarity of anatomical form with physiological function.
 - 2) Understand how the body systems work to maintain homeostasis.
 - 3) Use critical thinking skills to predict the consequences of homeostatic imbalances on human form and function.
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Course outcomes are based on the Human Anatomy and Physiology (HAPS)

Learning Objectives:

1. Demonstrate understanding of chemical and biological principles and knowledge that serve as the foundation for understanding human anatomy and physiology.
- 4) Understand and analyze cellular processes governing development, growth and normal function of the human body.
- 5) Understand the processes involved with maintaining homeostasis and anticipate what may occur when homeostatic balance mechanisms are lost.
- 6) Demonstrate practical knowledge of human gross and microscopic anatomy using human cadavers and prepared histological slides.
- 7) Identify structures in the body and analyze their relationship with other structures.
- 8) Describe development, regeneration and normal function of body systems
- 9) Understand the cellular and physiological mechanisms that drive tissue formation and function.
- 10) Employ the scientific process for understanding principles of anatomy and physiology.
- 11) Analyze A&P observations and data and determine the potential physiological consequences.

Lecture-Specific Course Outcomes:

The beginning of each set of slides used in lecture and in lab detail specific learning objectives addressed in that given unit.

Course Information:

Teaching methods: Lecture and Laboratory

Student Responsibilities:

- 1) Students are expected to complete the required reading and pre-laboratory assignments prior to class meeting times.
- 2) Students are expected to log on to the course Moodle site regularly to download course materials and read updated course announcements.
- 3) Regular attendance in lectures and laboratory is strongly recommended for successful completion of the course.
- 4) If absence from lecture or laboratory is necessary due to illness, it is your responsibility to obtain notes from another student.
- 5) Students are expected to be respectful during all course meetings and during meetings with course staff and Dr. Minns. Students who fail to do so will be subject to the student conduct code.

Course Policies

Dr. Minns and the Laboratory Instructors follow academic policies as stated in the 2015-2015 UM Catalog. Students are responsible for being familiar with these policies.

<http://www.umt.edu/catalog/>

These policies include but are not limited to:

- Student Conduct (http://life.umt.edu/vpsa/student_conduct.php)
- Class attendance
- Credit/No Credit Grading
- No more than 18 CR credits may be counted toward graduation. Courses taken to satisfy General Education Requirements must be taken for traditional letter grade. Courses required for the student's major or minor must be taken for traditional letter grade, except at the discretion of the department concerned.
- A CR is given for work deserving credit (A through D-) and an NCR for work of failing quality (F). CR and NCR grades do not affect grade point averages. The grades of CR and NCR are not defined in terms of their relationship to traditional grades for graduate course work.
- Election of the credit/no credit option must be indicated at registration time or within the first 15 class days on CyberBear. After the fifteenth day, but prior to the end of the 30th day of instruction, an undergraduate student may change a credit/no credit enrollment to an enrollment under the A F grade system, or the reverse by means of a drop/add form.
- The University cautions students that many graduate and professional schools and some employers do not recognize non traditional grades (i.e., those other than A through F) or may discriminate against students who use the credit/no credit option for many courses. Moreover, students are cautioned that some degree programs may have different requirements regarding CR/NCR credits, as stipulated in the catalog.
- Audit
- Incomplete Grading Policy

Plagiarism

- Plagiarism is the representing of another's work as one's own. It is a particularly intolerable offense in the academic community and is strictly forbidden. Students who plagiarize may fail the course and may be remanded to Academic Court for possible suspension or expulsion. (See Student Conduct Code section of this catalog.)
- Students must always be very careful to acknowledge any kind of borrowing that is included in their work. This means not only borrowed wording but also ideas. Acknowledgment of whatever is not one's own original work is the proper and honest use of sources. Failure to acknowledge whatever is not one's own original work is plagiarism.

Students with Disabilities:

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommason Center 154 or 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

on time and prepared to take a 'closed book exam'. No outside materials, including (but not limited to) papers, notebooks, calculators, or cell phones are allowed during exams. If a student elects to leave the testing period prior to the end of the time period, the student will turn in their exam for grading. Once a student has left the examination room, re-entry is not permitted.

There are two lecture exams and one final exam (semi-cumulative). *Laboratory and Lecture Material may overlap*. Each lecture exam (midterm exams and the final exam) is worth 80 points.

Lecture Quizzes

Approximately each week, students will be required to take quizzes deployed online or distributed in-class. Online quizzes will be taken through the WileyPlus online course supplement. Students are encouraged to work together to complete these quizzes. Late submissions will not be accepted and there is no opportunity to make up missed quizzes. Some quizzes may occur during class times and if students miss these quizzes for any reason they may NOT be made up.

Laboratory Quizzes

Each week, each laboratory will have either an 'in-house' or take-home quiz worth 13 points. If the following conditions are met, you may attend another lab section to take and get credit for the weekly quiz if you cannot attend your regularly scheduled lab:

- 1. You have a documented extenuating circumstance (illness with Dr's note, university sanctioned event) and received permission from Dr. Minns.**
- 2. You have received permission from your lab instructor prior to your normally scheduled lab time.**
- 3. You have received permission from the lab instructor whose lab you will be attending prior to the beginning of the lab section.**

If any of these conditions is not met for any reason, you may not take the quiz and receive credit. One laboratory quiz grade will be dropped from the final calculation of grades for all students.

Laboratory Practical Exams

Laboratory Instructors will discuss the breadth and scope of Laboratory Practical Examinations.

Two practical examinations each worth 80 points will be administered during the semester. The laboratory practical examinations cover only the new material presented since the previous exam, but may incorporate some lecture material. [Please note that students enrolled in the Honors laboratory section will have a cumulative second practical laboratory exam.]

"Make-ups" of practical exams are not available for any reason since these exams are based on the use of slides and actual laboratory specimens and due to the high use of the laboratory room. The regular lab practical exam is 50 minutes long and will begin at 20 minutes past the hour (this is 10 minutes after regular labs begin; if your lab regularly meets at 10:10am, your lab practical will begin at 10:20am). The specific format of the lab practical exam will be discussed in your laboratory.

Make-up Assignments:

NO “make-up” opportunities on missed assignments are available.

Final Examination

Please note the final examination policy from the University of Montana Undergraduate Course Catalog 2015-2016 (<http://www.umt.edu/catalog/>)

“Final examinations for the semester are scheduled in two hour segments, one for each course. ... The time scheduled for final examinations is the only time period during which final examinations are to be given...

Students may seek relief from writing more than two examinations during the same day. Students who are scheduled for more than two examinations may contact the appropriate faculty to arrange an alternate testing time during the scheduled final examination period. If satisfactory arrangements cannot be made, the student should seek the assistance of his or her dean.”

For BIOH370, the ‘alternate testing time’ will be a time after the originally scheduled examination and will require written documentation of more than two final examinations on a given day. The exam administered during the ‘alternate testing time’ may be different than the exam administered during the scheduled exam time. Written documentation for the Final exam must be provided to Dr. Minns by Friday, April 29, 2016.

Grade Disputes

If a dispute should arise regarding the answer to a lecture or laboratory examination or quiz item, the judgment of the faculty member will be final. *Any disputes regarding test items or examination grades must be communicated by email or through the Moodle dropbox within 5 days after the exam has been returned to the class.* Lecture Exam keys will be posted outside Dr. Minns’ office. Laboratory Practical Exam Keys will be posted outside of HS101 or on the lab Moodle page. Under no circumstances will examination grades be reconsidered after this five- day window. Due to grading deadlines, an announcement regarding the grade dispute window will be announced in the lab and in lecture with regard to the second lab practical and final lecture exam.

Late Work Policy

Work submitted after the deadline will be awarded a grade of 0. If an extenuating circumstance prevents the submission of the work on time, the student must email Dr. Minns and the lab instructor as soon as possible after the extenuating circumstances and provide written documentation. If the reason for missing the deadline is deemed acceptable by Dr. Minns, a new deadline will be established and work submitted by that new deadline will be graded without a late deduction.

Make-up Lecture Examinations

Make-up Lecture examinations are reserved for those students who cannot take an exam on the originally scheduled date due to:

- **A documented illness**
- **Documentation of participation in a University-sanctioned activity**

- **Participation in a University-sanctioned activity requires written communication from the University of Montana Office of Academic Advising**
- **Student athletes must provide documentation to Dr. Minns within the first week of classes**

If you do not contact your instructor prior to the scheduled exam, absolutely no make-up will be available. Exceptions may be possible due documented extenuating circumstances but students are responsible for contacting the instructor as soon as possible after the extenuating circumstance. Make up exams are at the discretion of the instructor.

An official UM student email address must be used for all correspondence.

Additional Teaching Staff

Laboratory Instructors:

Heather Labbe (honors lab): Heather.Labbe@mso.umt.edu
Danielle Mechfield: Danielle.Mechfield@umconnect.umt.edu
Chloe Torres: Chloe.Torres@umconnect.umt.edu
Ali Armstrong: Alison.Armstrong@umconnect.umt.edu

Undergraduate Teaching Assistants (UGTAs):

Each laboratory section will have at least one undergraduate teaching assistant to assist with instruction. UGTAs are not permitted to bring students to the lab outside of normal laboratory hours. They are not available for private tutoring.

Students interested in becoming an UGTA for future BIOH365 and BIOH370 courses may apply for UGTA positions in the Spring (the deadline is March 15, 2016). In order to be eligible to become a UGTA, students must earn a grade of B or higher in BIOH365 and BIOH370 and must fill out an application. Promising candidates will be invited for an interview. UGTAs are undergraduate students who enroll in BIOH480 or BIOH481. TAs must also co-enroll in the cadaver dissection course. Interested candidates are encouraged to talk with Dr. Minns and your laboratory instructor and UGTAs.

Tutors:

Free tutoring may be available for this course provided by students enrolled in the Human A&P tutoring course. These students must have earned a grade of B or higher in BIOH365 and BIOH370 and applied and interviewed for the position. They will provide posted tutoring hours and reviews prior to lecture exams. Tutors are not allowed to provide tutoring on a personal or private basis and will only conduct tutoring during announced hours. Students interested in becoming tutors for future BIOH365/370 courses are encouraged to talk with Dr. Minns.

Access to the Laboratory Outside of Regularly Scheduled Class Hours

Access to the laboratory is only available during scheduled 'Open Labs.' Your laboratory instructor will inform you of 'Open Lab' times. Access outside of your scheduled lab and 'open labs' is not permitted.

Laboratory Specimen and Cadaver Information and Policies.

Much of your education in anatomy will result from a selfless donation of thoughtful individuals who voluntarily chose to donate their body to the Montana Body Donation Program that supports WWAMI education programs. *WWAMI (Washington, Wyoming, Alaska, Montana and Idaho) is a cooperative regional medical education program of the University of Washington School of Medicine that provides places for twenty Montana students per year in its entering medical student class. These twenty students take their first year of medical school at Montana State University and complete their studies at the University of Washington in Seattle and at community clinical training sites throughout the Northwest.*

Respect for the Cadavers:

These donated cadavers are gifts and must be treated with the dignity and respect they deserve. It is inappropriate to make disrespectful comments within and outside of the laboratory. You will observe professional conduct while in the lab and outside the lab. Naming of the cadavers, unnecessary horseplay, posing of the cadavers, etc WILL NOT BE TOLERATED. These cadavers are the result of gifts from fellow Montanans and their families who believed strongly in the benefit of health science education.

<http://www.montana.edu/wwwwami/bodydonate.html>

Rules for Cadaver Use in the Anatomy and Physiology Labs:

- 1) The cadavers used in this lab were obtained from the Montana Body Donation Program at Montana State University. Cadavers are donated to MSU according to state regulations. Persons donating their body receive no financial compensation; this is truly their ultimate gift. Hence it is imperative that proper respect be paid to the cadaver at all times.
- 2) Only students enrolled BIOH 365, BIOH 112 and teaching staff are allowed into the cadaver lab at any time. No minor children or other family members are to be brought to the open lab times. If you see someone in the lab who you believe is unauthorized, notify laboratory personnel and/or ask him/her to leave the lab.
- 3) Body parts, tissue, etc must not be removed from the lab.
- 4) No cameras, camera phones or electronics with photo or video capability are allowed in the lab. Photography is prohibited.
- 5) Please be careful, the cadaver dissections will be used and material reviewed in other lab sections by other students. Keep the dissections moist and well covered when not working on that portion of the cadaver. Keep doors to lab closed and locked to keep security intact; students should police the lab.

Laboratory Safety in the Anatomy and Physiology Labs

- 1) In case of an emergency, dial extension 4000 to report serious injuries. Phones are located throughout the Health Sciences Building. The Health Sciences main office is in room 104.
- 6) First Aid supplies are available in the supply room for HS 101 (the anatomy lab), HS 104 (the main office) and HS 403.
- 7) You are required to wear disposable gloves (nitrile or neoprene, latex gloves are not acceptable) at all times while working with the cadaver prosections. Cadavers are embalmed with a fluid containing propylene glycol, ethyl alcohol, phenol and formaldehyde. Physical contact of your skin and clothing should be avoided.
- 8) Wear old clothes and a long-sleeved lab coat while working with the cadaver. Lab coats should not be worn outside the lab.
- 9) No open-toes shoes or sandals are allowed in the lab. Wear shoes that cover your entire foot.

- 10) Contact lens wearers should be aware that chemical fumes can pass into gas permeable and soft lenses. These fumes irritate the cornea. Protective glasses (prescription or safety glasses) are recommended to protect against chemical splashes. Know the location of the eyewash station before you begin.
- 11) If you are pregnant, or believe you may be pregnant, you may NOT participate in the laboratories until you provide Dr. Minns with written documentation from your obstetrician that verifies an understanding of the chemicals to which you and your fetus are being exposed while in the presence of the cadavers.
- 12) No foods, drinks, gum or the application of makeup are allowed in the lab.
- 13) Respirators can be purchased for use in the lab, if desired.
- 14) Wash hands prior to leaving the lab.

Important Dates and Assigned Readings (this may be amended by Dr. Minns during the Semester) (T=Tortora, G= Gilroy; students should use figures in the Gilroy atlas that include the terms in the laboratory 'cheat' sheets to understand the anatomical organization of those structures; Students are expected to know all figures and slides presented in the laboratory lecture and rotations)

Day of the week	Dates	Monday	Readings
Monday	Jan. 25	Review Syllabus and Course Policies Introduction to BIOH370	T Chap. 18
Lab 1	1/26-28	The Endocrine System	T. Chap. 18 Gilroy Atlas
Wednesday	Jan. 27	The Endocrine System	T Chap. 18
Friday	Jan. 29	Endocrine System	T Chap. 18
Sunday	Jan. 31	Lecture Chapter 18 Quiz due	
Monday	Feb. 1	Endocrine System	T Chap. 18
Lab 2	2/2-2/4	Blood	T Chap. 19
Wednesday	Feb. 3	Endocrine System	T Chap. 18
Friday	Feb. 5	The Cardiovascular System: Blood	T Chap. 19
Sunday	Feb. 7	Lecture Chapter 19 Quiz due	
Monday	Feb. 8	The Cardiovascular System: Blood	T Chap. 19
Lab 3	2/9-2/11	Heart Anatomy	T. Chap. 20, G
Wednesday	Feb. 10	The Cardiovascular System: The Heart	T. Chap. 20
Friday	Feb. 12	The Cardiovascular System: The Heart	T. Chap. 20
Sunday	Feb. 14	Lecture Chapter 20 quiz due	
Monday	Feb. 15	No Class- President's Day	

Lab 4	2/16-2/18	Heart Physiology and Blood Pressure Lab Physiology demo- ECG's and interpreting rhythm strips Physiology of Circulation	T. Chap. 20 Gilroy Atlas
Wednesday	Feb. 17	The Cardiovascular System: The Heart	T. Chap. 20
Friday	Feb. 19	In class- Tutor Review Session (Chap. 18-20)	T. Chap. 18-20
Sunday	Feb. 21	Lecture Chapter 21 Quiz due	
Monday	Feb. 22	The Cardiovascular System: Blood vessels and hemodynamics	T. Chap. 21
Lab 5	2/23-2/25	Blood Vessels Vessels of the Head, Neck and Upper Extremity Case Study 1: Cardiology Case Study Due 2/26 on Lab Moodle Page	T. Chap. 21 Gilroy Atlas -
Wednesday	Feb. 24	The Cardiovascular System: Blood vessels and hemodynamics	T. Chap. 21
Friday	Feb. 26	The Cardiovascular System: Blood vessels and hemodynamics	T. Chap. 21
Monday	Feb. 29	Lecture Exam 1	Chap. 18-21
Tuesday	March 1	Lecture Chapter 22 Quiz due	
Lab 6	3/1-3/3	Blood Vessels Vessels of the Abdomen and Lower Extremity	T. Chap. 21 Gilroy Atlas
Wednesday	March 2	The Lymphatic System and Immunity	T. Chap. 22
Friday	March 4	The Lymphatic System and Immunity	T. Chap. 22
Monday	March 7	The Lymphatic System and Immunity	T. Chap. 22
Lab Practical	3/8-3/10	****Lab Practical #1**** (labs 1-6)	
Wednesday	March 9	The Lymphatic System and Immunity	T. Chap. 22
Friday	March 11	The Respiratory System	T. Chap. 23
Sunday	March 13 daylight savings	Lecture Chapter 23 Quiz due	
Monday	March 14	The Respiratory System <u>UGTA Applications for 2016-2017 year</u>	T. Chap. 23

		are due March 15 by 5pm in the DBS office	
Lab 7	3/15-3/17	Lymphatics and Immune System	T. Chap. 22
Wednesday	March 16	The Respiratory System	T. Chap. 23
Friday	March 18	The Digestive System: Dr. Stacey Simmons guest lecture	T. Chap. 24
Sunday	March 20	Lecture Chapter 24 and 25 Quiz due	
Monday	March 21	The Digestive System Montana State Science Fair (judging 12:30-4:30pm Adams Center-great extra credit opportunity)	T. Chap. 24
Lab 8	3/22-3/24	Anatomy of the Respiratory System	T. Chap. 23 Gilroy Atlas
Wednesday	March 23	The Digestive System	T. Chap. 24
Friday	March 25	Nutrition and Metabolism	T. Chap. 25
Monday	March 28	Nutrition and Metabolism	T. Chap. 25
Lab 9	3/29-3/31	Physiology of Respiration Physiology demo: Spirometric testing and interpretation Case Study 2: Respiratory Physiology due April 1 on Moodle	T. Chap. 23 Gilroy Atlas
Wednesday	March 30	Lecture Exam 2	T. Chap. 22-25
Thursday	March 31	Lecture Chapter 26 Quiz due	
Friday	April 1	The Urinary System	T. Chap. 26
Mon-Friday	April 4-8	Spring Break- No classes!	
Monday	April 11	The Urinary System	T. Chap. 26
Lab 10	4/12-4/14	Digestive System	T. Chap. 24 Gilroy Atlas
Wednesday	April 13	The Urinary System	T. Chap. 26
Friday	April 15	Tutor Review Session on the Urinary System UMCUR	T. Chap. 26
Sunday	April 17	Lecture Chapter 27 Quiz due	
Monday	April 18	The Urinary System/ Fluid, Electrolyte and Acid-Base Balance	T. Chap. 26 T. Chap. 27
Lab 11	4/20-4/22	Urinary System Physiology demo: Urinalysis testing and interpretation	T. Chap. 26-27 Gilroy
Wednesday	April 20	Fluid, Electrolyte and Acid-Base Balance	T. Chap. 27
Friday	April 22	Fluid, Electrolyte and Acid-Base Balance	T. Chap. 27
Sunday	April 24	Lecture Chapter 28 quiz due	
Monday	April 25	The Reproductive System	T. Chap. 28

Lab 12	4/26-4/28	Reproductive System – Male and Female	Tortora 1041-1088 Gilroy
Wednesday	April 27	The Reproductive System	T. Chap. 28
Friday	April 29	The Reproductive System	T. Chap. 28
Sunday	May 1	Lecture Chapter 29 quiz due	
Monday	May 2	Development and Inheritance	T Chap. 29: 1105-1127
Lab Practical	5/3-5/5	****Lab Practical #2**** (labs 7-12)	
Wednesday	May 4	Development and Inheritance Lecture Post-term Assessment Due	T Chap. 29: 1105-1127
Friday	May 6	Development and Inheritance	T Chap. 29: 1105-1127
Finals Week	Friday May 13	10:10am-12:10pm	Semi-cumulative (Chap. 18-25: ~20 questions), and Chap. 26-29: ~40 questions

Laboratory Specific Dates and Learning Outcomes

Dates Tues-Thurs	Topic	Learning Outcomes	Assigned Readings
		All Labs: HAPS Mod B: Students who have completed this section of the course should be able to explain the basic concept of homeostasis and how homeostatic mechanisms apply to body systems.	
Lab 1	The Endocrine System	HAPS Mod J.: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the endocrine system and explain the functional roles of their respective hormones in communication, control, and integration.	Tortora pp. 615-660 Gilroy Atlas
Lab 2	Blood Physiology demo: Blood typing, Formed element identification, homeostatic imbalances of the blood	HAPS Mod K: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the cardiovascular system and explain their functional roles in transport and hemodynamics.	Tortora pp. 661-687 Gilroy Atlas
Lab 3	Heart Anatomy		Tortora pp. 688-728 Gilroy Atlas

Lab 4	Heart Physiology/Blood Pressure Physiology demo- ECG's and interpreting rhythm strips Physiology of Circulation		Tortora Chap. 688-728 Gilroy Atlas
Lab 5	Blood Vessels Vessels of the Head, Neck and Upper Extremity		Tortora pp. 729-798 Gilroy Atlas -
Lab 6	Blood Vessels Vessels of the Abdomen and Lower Extremity		Tortora pp. 729-798 Gilroy Atlas
	****Lab Practical #1****	Covers labs 1-6	
Lab 7	Lymphatics and Immune System	HAPS Mod L: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the lymphatic system and explain their functional roles in fluid dynamics and immunity.	Tortora pp. 799-839
Lab 8	Anatomy of the Respiratory System	HAPS Mod M: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the respiratory system and explain their functional roles in breathing/ventilation and in the processes of external and internal respiration.	Tortora 840-885 Gilroy Atlas
	Spring Break! No Labs		
Lab 9	Physiology of Respiration Physiology demo: Spirometric testing and interpretation !		Tortora pp. 840-885
Lab 10	Digestive System	HAPS Mod N: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the digestive system and explain their functional roles in digestion, absorption, excretion and elimination. HAPS Mod O: Students who have completed this section of the course should be able to explain the functional	Tortora 886-939 Gilroy Atlas

		relationship among cellular, tissue and organ level metabolism, the role nutrition plays in metabolism, and the mechanisms by which metabolic rate is regulated in the body.	
Lab 11	Urinary System Physiology demo: Urinalysis testing and interpretation	HAPS Mod P: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the urinary system and explain their functional roles. HAPS Mod Q: Students who have completed this section of the course should be able to identify and describe the physiology of the homeostatic mechanisms that control fluid/electrolyte and acid/base balance.	Tortora 979-1022
Lab 12	Reproductive System – Male and Female	HAPS Mod R: Students who have completed this section of the course should be able to identify and describe the major gross and microscopic anatomical components of the reproductive system and explain their functional roles in reproduction and inheritance.	Tortora 1041-1088 Gilroy
	****Lab Practical #2****	On labs 7-12	