

**Instructor:** Patricia Visser, Ph.D.

**Office:** JM 234A

**Contact Phone:** 517-796-8533

**Class Meets:** Tues (Lec & Lab) & Thurs (Lec)

**Meeting Times:** 1:30-2:56 (Lec) 3-4:54 (Lab)

**Number of Credits:** 4

**Location:** JM 251 Lec; JM 104 Lab

**\*Contact Email:** patricia\_visser@jccmi.edu

**Office Hours:**

**Mon Wed** 8:30-9 & 11:30-11:45 (Hillsdale)

**Tues & Thurs** 9:30-10 + **Thurs** 3-4:30 (Central campus) Others by appointment.

**Online:** Course uses JetNet (Moodle); contact JC Solution Center for technical support.

\*Email is the best route to contact me. To the best of my ability, email replies to coursework questions will be sent within 12 hours of message receipt from a student.

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## Course Description

This is the first course of a 2-semester course sequence in which students study the anatomy and physiology of the human body. The course includes introductions to basic chemistry, biology, and histology, and extends to the survey of the integumentary, skeletal, muscular and nervous systems. This course includes a laboratory component in which students are responsible for performing dissections and making original observations on dissected material. The laboratory experience culminates with the use of a plastinated human specimen for observation. **It is a difficult course requiring hard work and discipline to be successful. A strong background in biology and/or chemistry is highly recommended.**

Prerequisites: BIO 253

## Course Considerations

This is a lab science course so should be thought of as two courses. The reading level is difficult. **It is not recommended for students who have not had prior college-level science. Chemistry and biology are strongly suggested prior to this course.** Students earning a final grade of 3.0 or higher report studying **at least 20 hours per week for this one course** so please plan accordingly.

**General Philosophy:** You are an adult and a college student. As such you are expected to be able to work and learn independently, and to be responsible for all assignments and materials. This is a difficult course and will cover a lot of material which will require hard work and discipline. You will need to keep up as the pace of the class is fast, and each day's class will be based on material from the previous days. **There are no quick, easy ways to pass.** What you learn here will be directly proportional to the amount of effort you have expended. You're also expected to be considerate of the rights of others and not to interfere with those who are trying to study, work and learn.

## Textbook

PRINCIPLES OF ANATOMY AND PHYSIOLOGY, Tortora & Derrickson; 15th edition; [ISBN: 9781119343738]

Print edition or electronic/WileyPLUS version **[Text Book Zero! ...The text is available in digital format.]**

[Other A&P textbooks for a full-year class (25-29 chapters) are acceptable (e.g. Martini, Marieb, Patton, Saladin, etc.).

An online A&P text is available at [www.openstax.com](http://www.openstax.com), but it is missing some information for the end of the course.]

Lab Manual for Anatomy & Physiology II, Bradford & Visser; [from JC Bookstore; also on course JetNet site]

Anatomy and Physiology I Course pack – Visser sections; from the JC Bookstore

**Extras:** No other purchases are required; safety glasses for dissection are recommended.



**GEO 4 (Scientific Reasoning).** The course goals incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs.

## Course Objectives

By the end of the semester, students will demonstrate – through both factual lecture exams and laboratory practical identification – their understanding of the following topics (with focus on the human body):

1. Identify the major types of sensory receptors & CNS sensory pathways
2. Differentiate the major motor pathways within the CNS
3. Differentiate the actions of the autonomic nervous system divisions
4. Describe the structures and sensory functions of the nose, taste buds, eye and inner ear.
5. Identify source, secretory control, & function of the major hormones produced by the body
6. Identify structures, formation, & functional roles of the elements of blood
7. Describe the structure of the heart, conduction system, cardiac cycle and cardiac output
8. Describe the types of blood vessels, patterns of circulation and mechanisms of vascular exchange
9. Describe blood pressure, hemodynamics, and mechanisms of control
10. Identify the structures and functions of the lymphatic system
11. Identify mechanisms of innate (nonspecific) vs. adaptive (specific) defenses
12. Identify the structures of the respiratory system and relation to control of ventilation
13. Describe mechanisms of gas exchange & transport
14. Identify and structures & functions of the components of the digestive system
15. Describe the mechanisms and regulation of digestive processes
16. Describe the basic mechanisms of cellular respiration & anabolism of carbs, lipids, & proteins
17. Identify the major activities in maintenance of energy balance & thermoregulation
18. Identify the major structures and functions of the urinary system components
19. Describe regulation of urine composition and maintenance of fluid balance in the body
20. Describe mechanisms of maintaining acid/base balance and causes & effects of imbalance
21. Identify the structures, functions and gamete formation in the male & female reproductive systems
22. Describe events in conception, pregnancy, basic embryological development and parturition
23. Identify major terms & mechanisms in genetic inheritance
24. Make predictions related to homeostatic imbalance, including disease states & disorders

## Grading Procedure

The grade you earn in this course is based upon total points accumulated on the following: (approximately 850 pts)

- 1) Class Exams (5 @ 80 points each)
- 2) Lab Practicals (25-100 points each)
- 3) Daily Quizzes (10 best; @ 5 points each = 50 points)
- 4) Homework or other activities (2-5 points each)
- 5) Lab hand-ins (8 @ 10 points each)
- 5) Research Paper (40 points) **DUE NO LATER THAN April 23**
- 6) Lab Participation (30 pts)

**Grading Scale** [You are expected to keep a record of your scores. Grades will be posted on JetNet.]

GPA	GRADE RANGE	GPA	GRADE RANGE
4.0	95-100%	1.5	70-74%
3.5	90-94%	1.0	65-69%
3.0	85-89%	0.5	60-64%
2.5	80-84%	0.0	0-59%
2.0	75-79%		

## Failure

**Use of the human materials and cadaver mandates a requirement to sign the LEARNING CONTRACT prior to lab participation.** You must read and accept the Human Specimen Respect Policy and the Anatomy and Physiology Lab Rules. These can be found on the course JetNet site. [BIO 254 students will not be dissecting nor working extensively with the human specimen but instructor demonstration of the specimen will be part of the course.] Your instructor will give you a learning contract to fill out and return. **It is due before the end of the semester's second week. Failure to complete and return this will result in an instructor-initiated drop.**

## Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

**Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:**

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

**Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:**

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

**Any student found cheating or plagiarizing information will receive, at minimum, a score of zero for that exam or assignment and may receive a zero for the course. The Academic Deans will also be informed of the incident.**

## Makeup Policy

You are responsible for all assignments, handouts and materials covered in both lecture and lab. Make-up opportunities for the exams and/or practicals are extended only in the case of emergencies / hospitalization / funerals and require documentation verifying the cause of the absence. It is your responsibility to contact the instructor for arrangements.

**Second and subsequent make-up exams will be awarded only 80% of the achieved score. Practical may not be made up unless you can take the practical with another lab section. In the event of a missed practical, you may either take a zero for the score, or take an incomplete for the course, and make up the practical the next semester that BIO 254 is offered.** Instructor reserves the right to award zero or reduced credit for any and/or all late assignments.

## Help

- **The text's companion website** is available -- see instructions in your text, access card and/or class JetNet site.
- Tutors and additional free services for academic success are available at the Center for Student Success. CSS can also help with writing, study skills, test anxiety, math and reading.
- Students with documented disabilities should contact the Center for Student Success as soon as possible to ensure that accommodations are implemented in a timely fashion. Accommodations do not automatically carry over to the next semester. <https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/>

## Class Schedule Expectations

Exam / Practical dates subject to change (but not likely)

- Complete your reading/study of the chapters by these exam dates
- **Pre-Exam Assignments** are due at the start of each Exam – hand in on your way into the class period.
- **Lab-Participation Points** are based on focused participation in lab and recitation activities and cannot be made up.
- **No video / no photography** in class at any time. Lots of study images are posted to JetNet for your use.
- **Schedule Changes:** Instructor reserves the right to alter schedule if necessary, at their sole discretion.

## Student Lab Responsibilities

The lab period is a time of active learning involving the study of various materials, interactive projects, and other activities to enhance class success. Interaction with, and learning from, other members of the class and the instructor are critical parts of the lab environment. Cooperation with other students and the instructor in keeping the lab orderly and clean is expected. Please observe the following laboratory guidelines and encourage your partners to do the same.

1. Specific instructions will be given at the beginning of each lab period. You will be expected to complete all the assignments that require dissection or lab apparatus during this time.
2. You will be expected to return all materials, apparatus, and reference books to their proper place at the end of the lab period. Apparatus that has been used should be washed with tap water and blotted dry with paper towels. Please leave materials neatly arranged; all members of each working group will be held accountable for the condition and return of all lab materials.
3. Consult with other members of the class and the instructor concerning any part of your work. Cooperation and consultation are encouraged; however, make certain that you completely understand everything since you will be held individually accountable for all materials covered.
4. Disruptive behavior and loud conversations will not be permitted. Do not disturb others.
5. Expect to work the entire allotted class period. Lab and recitation typically require the full amount of time.
6. 60 points of your final grade will be based on your attitude and effort in lab during the on-site days, as demonstrated by your cooperation and concentration in lab; as well as from in class assignments.
7. Any information covered in lab is "fair game" for both the lab practical exams and class/chapter exams. Lab practicals, however, are limited to information on the lab practical lists. **Correct spelling required.**

## Attendance Policy

In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur at three designated times each semester. Instructors will assign one of three non-transcribed letter symbols to each student during each reporting period (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

### Participation/Progress Symbols

- H – The student is not doing acceptable work and needs **Help** to be successful.
- Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Quit**). These students will be dropped/withdrawn from the class.
- V – The instructor **Verifies** that the student is participating and doing acceptable work.

## Miscellaneous

- ALL electronic correspondence MUST utilize JC supported systems: JC outlook email and/or JetNet messaging. Your instructor will NOT respond to any other electronic correspondence.
- No phone nor camera usage during any class times; no exceptions unless instructor directs use.
- No materials will be used during examinations of any kind, except those provided by your instructor. No electronic devices are allowed during examinations. You will need a #2 pencil for examinations.
- An exam score adjustment MAY be used for each exam. This is a privilege, not a requirement.
- It is expected that if you think an error has been made, or disagree with what has been done, or feel that you have been treated unfairly, it will be brought to my immediate attention so that the problem can be resolved.
- There will be no extra credit projects for this course, since it is felt that your time will be better allocated in studying the assigned materials.
- An iClicker **may** be loaned to you during class visits for the semester. **At no time will this iClicker leave the lab room!** You will borrow your loaner clicker at the beginning of lab and return it to where it belongs at the end of each lab. **You are responsible for the replacement cost of your clicker should it become damaged or is missing.**

**BIO 254: A&P I Calendar of Class Activities (\*Expected Schedule) Section 81 Winter 2019**

<u>Week</u>	<u>Date</u>	<u>Class Topic or Activity</u>	<u>Lab</u>
1	Jan.14 Jan. 16	Chapter 16 Sensory & Motor Pathways Finish Ch. 16; Begin Ch. 17 Special Senses	Ex. 1 Sensory Pathways
2	Jan. 21 Jan. 23	Finish Ch. 17	Ex. 2 Special Senses
3	Jan.28 Jan. 30	Chapter 15 Autonomic Nervous System Chapter 18 Endocrine System	Ex. 3 Endocrine System I
4	Feb. 4 Feb. 6	<b>EXAM 1 – CHAP. 15 → 17</b> Finish Ch. 18	Ex. 3 Endocrine System II
5	Feb. 11 Feb. 13	Chapter 19 Blood Finish Ch. 19; Begin Ch.22 Lymphatic System	<b>Lab Practical 1 (60)</b>
6	Feb.18 Feb. 20	Finish Ch. 22 Chapter 20 Heart	Ex. 4 Blood Ex. 6 Cardiovascular I
7	Feb.25 Feb. 27	<b>EXAM 2 -- CHAP. 18, 19, 22</b> Finish Ch. 20	Ex. 5 Thoracic Cavity
8	Mar. 4 Mar. 6	Chapter 21 Vascular System “	Ex. 6 Cardiovascular II
9	Mar.9-17	<b>SPRING BREAK – NO CLASSES</b>	
10	Mar.18 Mar. 20	Chapter 23 Respiratory System	Ex. 7 Respiratory System
11	Mar.25 Mar. 27	<b>EXAM 3 – CHAP. 20, 21, 23</b> Chapter 24 Digestive System	<b>Lab Practical 2 (80)</b>
12	Apr.1 Apr. 3	Finish Ch. 24; Begin Chapter 25 Metabolism Finish Ch. 25	Ex. 9 Metabolism
13	Apr. 8 Apr. 10	Chapter 27 Body Fluid Homeostasis Chapter 26 Urinary System	Ex. 8 Abdominal Cavity
14	Apr. 15 Apr.17	<b>EXAM 4 – CHAP. 24, 25, 27</b> Finish Ch. 26	Ex. 10 Urinary System
15	Apr. 22 Apr. 24	Chapter 28 Reproductive System <b>**Research Paper Due**</b> Finish Ch. 28; Begin Ch. 29 - Pregnancy	Ex. 11 Reproductive System
16	Apr.29 May 1	Ch. 29 Genetics <b>EXAM 5 – CHAP. 26, 28, 29</b>	<b>Lab Practical 3 (80)</b>

\*It is possible that some revisions will be necessary during the course due to unforeseen school closing policies, instructor illness and other procedural improbabilities.

**Important Dates: Winter 2019**

<b>DATE</b>	<b>EVENT</b>
JAN. , 2019	FINAL DROP/ADD DATE
FEB. 1, 2019	IN-SERVICE DAY. NO CLASSES
MAR 9-17, 2019	SPRING BREAK. NO CLASSES
APR. , 2019	FINAL DATE TO WITHDRAW WITH A “W”
MAY 7, 2019	GRADES DUE (FOR 15-WEEK CLASSES)