

**MARION TECHNICAL COLLEGE
COURSE SYLLABUS**

Course No.: SCI 1250 Course Title: Anatomy & Physiology II

Term: Fall Semester 2012 Department: Arts and Sciences

Credit Hours: 4 Lecture Hours: 3 Lab Hours: 1

Recommended Prerequisite(s): SCI 1200 with a "C" or above

Day/Time: T/R, 12:30 – 1:50 p.m. (Day Sections)
T/R, 5:00 – 6:20 p.m. (Evening Sections)
Labs scheduled at various days/times

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In case of emergency: Dial 9-911 from any office or courtesy phone on campus.

Course Description: This is the second of a two-semester sequence. The laboratory emphasizes the anatomy of the respiratory, endocrine, cardiovascular, urinary, digestive, and reproductive systems. The lecture covers the physiology of all of the above plus special senses, metabolism, acid-base balance, and fluid and electrolytes.

Textbooks:

Required: Marieb. *Human Anatomy and Physiology*, 9th Ed., 2013.

Mastering A & P

Publisher: Pearson

Optional: Marieb. *Study Guide*, 9th Ed., 2013.

Publisher: Pearson

MAJOR COURSE LEARNING OBJECTIVES

A student successfully completing this class will be able to:

Objectives for the Eye and Ear

1. Describe the anatomy of the eyeball and its protective structures.
2. Explain how refractive structures of the eye operate in focusing.
3. Identify the muscles involved in visual activity.
4. Explain the chemical changes involved in light and dark adaptations.
5. Describe chemical changes in rods and cones that result in an impulse.
6. Trace the pathway of a visual impulse from the retina to the occipital lobe.
7. Relate the causes of major abnormalities of vision to their corrective procedures.
8. Describe the characteristics of sound waves and the relationship of these to hearing.
9. Describe the anatomy of the ear.
10. Follow the transmission of sound waves from the tympanic membrane to the basilar membrane.
11. Describe the physical changes in the inner ear which produce an auditory impulse.
12. Explain the auditory pathway from the cochlea to the temporal lobe.
13. Describe how different structures of the vestibular apparatus generate impulses in response to different types of body movements.

Objectives for the Endocrine System

1. Compare and contrast endocrine and exocrine glands.
2. List the major endocrine glands, hormones and cite their functions.
3. Distinguish between negative and positive feedback and explain the concept of negative feedback in relation to the endocrine system.
4. List the symptoms of hyperthyroidism and hypothyroidism.
5. Describe the symptoms of hypoparathyroidism and hyperparathyroidism.
6. Distinguish between the structure and function of the adrenal medulla and the adrenal cortex.
7. Cite symptoms of adrenal cortical hypofunction and hyperfunction.
8. State possible reasons for hypersecretion of the adrenal medulla.
9. Distinguish between the roles of glucagon and insulin in controlling the level of blood glucose.
10. Describe the effects of hypoinsulinism and hyperinsulinism.
11. Describe the functions of the anterior pituitary hormones on the testes and ovaries.

Objectives for the Cardiovascular System

1. Identify the components and functions of the blood.
2. Identify the developmental stages of red blood cells.
3. Describe the clotting pathway indicating those factors involved.
4. Describe the structure and function of the heart.
5. Describe the blood flow through the heart chambers indicating the appropriate valves and blood vessels.
6. Describe the autonomic nervous innervation and the electrical conduction pathway of the heart.
7. Recognize a normal ECG and identify the events represented by each wave and their intervals.
8. Define cardiac output, stroke volume, and cardiac reserve.
9. Explain the factors and mechanisms which regulate cardiac output.
10. Describe the relationship between stroke volume and heart rate.
11. Explain the principles of rhythmicity and refractory periods as they relate to cardiac tissue.
12. Identify the structural differences between an artery, a vein, and a capillary.
13. Differentiate between systolic and diastolic blood pressures and the factors influencing them.
14. Distinguish between arterial, capillary, and venous pressures.
15. Identify the major factors influencing blood pressure and how each factor is regulated.
16. Describe the basic anatomy of the lymphatic system.
17. Describe the components and functions of lymph.
18. Relate the importance of the spleen to maintenance of circulatory homeostasis.

Objectives for the Respiratory System

1. Identify the major structures and functions of the respiratory system.
2. Explain the structure of the alveolar-capillary membrane and describe its function in the diffusion of gases.
3. Describe the sequence of events leading to inspiration and expiration.
4. Explain how respiratory gases are carried by the blood.
5. Describe the concepts of total gas pressure and partial gas pressure (partial pressure).
6. Explain the role of different factors in the diffusion of gases.
7. Describe the different factors which affect the rate of respiration.
8. Describe the respiratory center in the medulla oblongata.
9. Explain the oxygen-hemoglobin dissociation curve.

Objectives for Metabolism

1. Define metabolism.
2. Compare and contrast catabolism and anabolism.
3. Define the term calorie and explain how it is measured and applied in the oxidation of food.
4. Describe the significance of BMR and how it is measured.
5. Describe the pathways of carbohydrate, protein, and lipid metabolism.
6. Explain the mechanisms by which the liver regulates blood-glucose levels.

7. Understand the differences between the three stages of carbohydrate metabolism, glycolysis, citric acid cycle, electron transport system.
8. Explain how protein and lipids enter the carbohydrate metabolism to generate ATP.
9. Describe the hormonal control of carbohydrate, protein, and lipid metabolism.
10. Discuss the relationship of a negative nitrogen balance and a positive nitrogen balance to protein metabolism.
11. Describe influences on metabolic rate to increase heat production.
12. Describe the role of the hypothalamus on temperature regulation.

Objectives for the Urinary System

1. Describe renal circulation.
2. Describe how various factors affect the rate of glomerular filtration, tubular reabsorption, and secretion.
3. Explain the role of ADH, aldosterone, and parathyroid hormones in renal tubular reabsorption.
4. Identify the role of renin in tubular reabsorption.
5. Relate changes in blood pressure and osmotic pressure to filtrate production and tubular reabsorption.
6. Discuss the effect of stress on glomerular filtration.
7. Relate the processes of active and passive transport to tubular reabsorption, tubular secretion, and tubular excretion.
8. Explain the role of the kidney in acid-base balance and fluid-electrolyte balance.
9. Describe normal urine composition.
10. Identify the major abnormal urinary constituents.

Objectives for Fluid-Electrolyte/Acid-Base Balance

1. State the approximate percentages of water in adults and in infants.
2. List the functions of water in the body.
3. Compare and contrast the composition and relative volumes of plasma, interstitial fluid, and intracellular fluid.
4. List the general functions of electrolytes in the body.
5. Explain the mechanisms regulating the concentrations of sodium, potassium and calcium.
6. Give the normal functions of each of the above electrolytes.
7. Differentiate between acids and bases.
8. Explain the theory behind the concept of pH.
9. Give the normal pH range of blood.
10. Describe how a buffer system operates to prevent drastic changes in the pH of a system.
11. Identify the different buffer systems of the body.
12. Explain how the respiratory system influences the pH of the body.
13. Explain how the kidneys act as essential regulators of acid-base balance.

Objectives for the Reproductive System

1. Describe the histology of the male and female reproductive tracts and the accessory glands.
2. Describe the stages of spermatogenesis.
3. Describe the composition and function of semen.
4. Describe the functions of the gonadotropic hormones and testosterone in the male.
5. Describe the functions of the gonadotropic hormones, estrogen, and progesterone in the female.
6. Describe the structural changes and phases associated with the development of the follicle.
7. Relate ovarian and menstrual cycles to reproductive hormonal levels.
8. Describe the process of fertilization.
9. Describe the hormonal changes that occur during pregnancy.

COURSE OUTLINE

Tentative Lecture Schedule and Assignments

- Week 1 The Special Senses – Chapter 15
The Ear: Hearing and Equilibrium
- Week 2 **Monday, September 3 – Holiday: Labor Day**
The Special Senses – Chapter 15
The Eye: Vision
- Week 3 The Endocrine System – Chapter 16
Hormones
Negative and Positive Feedback
Thyroid/Parathyroid Glands
Adrenal Medulla/Adrenal Cortex
- Week 4 The Endocrine System – Chapter 16
Pancreas
Testes
Ovaries
EXAM I – September 20
- Week 5 The Cardiovascular System – Blood – Chapter 17
Blood Composition and Function
Plasma
Formed Elements
Homeostasis
Transfusions/Blood Replacement
- Week 6 The Cardiovascular System – Heart – Chapter 18
Heart Anatomy
Electrical Events
Heart Sounds
The Cardiac Cycle
- Week 7 The Cardiovascular System – Blood Vessels – Chapter 19
Blood Vessel Structure and Function
Blood Flow and Blood Pressure
Maintaining Blood Pressure
- Week 8 The Lymphatic System – Chapter 20
Lymphatic Vessels
Lymph Nodes and Tissues
Lymphoid Organs
EXAM II – October 18
- Week 9 The Respiratory System – Chapter 22
Functional Anatomy of the Respiratory System
Mechanisms of Breathing
Gas Exchange Between Blood, Lungs, and Tissues

- Week 10 The Respiratory System – Chapter 22
Transportation of Respiratory Gases (oxygen-hemoglobin dissociation curve)
Control of Respiration
Metabolism – Chapter 24
Metabolic Reactions
- Anabolism and Catabolism
- Oxidation/Reduction Reactions
- ATP Synthesis
- Week 11 Metabolism – Chapter 24
Metabolism of Nutrients
- Carbs, Lipids, Proteins
Vitamins, Minerals, and Hormones in Metabolism
Metabolic Rate
- Week 12 **Monday, November 12 – Holiday: Veterans’ Day**
EXAM III – November 15
- Week 13 The Urinary System – Chapter 25
Kidney Anatomy
Kidney Physiology (filtration, reabsorption, secretion)
Urine Production – Characteristics, Composition, Volume
Thursday, November 22 – *Thanksgiving*
- Week 14 Fluid, Electrolyte and Acid-Base Balance – Chapter 26
Body Fluids
Water Balance and ECF Osmolality
Electrolyte Balance
Acid-Base Balance
- Week 15 The Reproductive System – Chapter 27
Anatomy of Male and Female Reproductive Systems
Spermatogenesis and Oogenesis
Hormonal Control
Pregnancy and Human Development – Chapter 28
Fertilization
Embryonic Development
- Week 16 **FINAL EXAM – December 13**

NOTE: This is a tentative schedule and subject to change at the discretion of the instructor.

If there is a need for reasonable accommodation or assistance because of mental, physical or learning disability, the student is requested to contact the instructor or if preferred, the Student Services counselor within the first two weeks of class.

ADDITIONAL INFORMATION: Eating and drinking is not permitted in any computer classroom or lab.
All copyright laws will be observed.
It is illegal to copy software.

EVALUATION PROCEDURES

ATTENDANCE AND PARTICIPATION: Consistent with class attendance Policy #721, the student is responsible for attending every class and for the material presented. If a student will not be attending a class, he or she is responsible to contact the instructor and to make sure all assignments are completed.

GRADING PROCEDURES:

1. Exams (3)	15.0% each	<u>Grading Scale</u>
2. Lab Quizzes	15.0%	900 - 1000 = A
3. Lab Practical	15.0%	800 - 899 = B
4. Final Exam	20.0%	700 - 799 = C
5. Relevance Writing	2.5%	600 - 699 = D
6. Class Participation	2.5%	Below 600 = F

MAKE-UP AND LATE POLICY:

Make-up exams will be given only for excused absences as determined by the instructor. The instructor must be notified of the prospective absence prior to the time scheduled for the examination. The make-up exam may be a different exam than the exam given during the scheduled exam time.

COLLEGE GRADUATE COMPETENCIES

Assessment begins with a clear understanding of what students are expected to learn. College Graduate Competencies (CGC's) are common to all areas of study and apply to all students. The individual sub-skills defined in each CGC are taught, reinforced, and/or periodically measured in various courses throughout the curriculum. The six CGC areas and statements are:

1. **Communications:** Communicate effectively both written and orally.
2. **Mathematics:** Solve problems using mathematics.
3. **Problem-Solving:** Solve problems through analysis, creativity, and synthesis to make informed decisions.
4. **Professionalism:** Demonstrate good work habits, effective interpersonal and teamwork skills, and a high level of professionalism.
5. **Technology:** Use technology tools efficiently and effectively to perform personal and professional tasks.
6. **Diversity:** Exhibit respect and sensitivity for individual and institutional differences.

Core Competencies:

1. Student is able to describe the sequence of events in human physiological systems (urine formation).
2. Student is able to describe the relationship between functional systems (cardiovascular, skeletal, digestive, and endocrine implications of calcium homeostasis).

Course Goals:

1. Describe the structure and function of the eye and ear.
2. Describe the structure and function of the endocrine system.
3. Describe the structure and function of the cardiovascular system.
4. Describe the structure and function of the respiratory system.
5. Describe the function of body metabolism.
6. Describe the structure and function of the urinary system.
7. Describe the function of fluid and electrolytes in the body.
8. Describe the function of acid-base in the body.
9. Describe the structure and function of the reproductive system.

COMMUNICATIONS DEVICE USAGE

All personal communication devices, including cell phones, must be set to vibrate or off while in classrooms, labs and participating in other class-related activities, unless the use of such a device is specified in the official course syllabus. Infractions will result in warnings and, eventually, grade-related penalties. Exceptions must be approved in writing by the instructor.

Additionally, all personal communication devices, including cell phones, must be deactivated (turned completely off) during exams, quizzes or other evaluations. Any student found to be using a communication device during an exam will be given a grade of zero for the exam.

ACADEMIC MISCONDUCT

Examples of dishonest or unacceptable scholarly practice at Marion Technical College include but are not limited to:

- A. Work copied verbatim from an original author; work copied practically verbatim with some words altered from the original without proper credit, i.e., reference citations, being given; a copyright explanation and more information is available at www.copyright.com.
- B. Copying answers [and/or electronic data] from another's test paper, quizzes, notes, book, etc.
- C. Evidence of a deliberate and calculated plan to engage in a dishonest academic practice, such as gaining access to examinations prior to the time the exam was to be given or the extraction of information regarding an examination from other students.
- D. Falsification of clinical, practicum, or laboratory records.
- E. Plagiarism – using someone else's ideas or words as your own. In an educational setting you can avoid plagiarism by providing appropriate source documentation. For more information on plagiarism, visit www.plagiarism.org.

FINANCIAL AID ATTENDANCE REPORTING

Marion Technical College is required by federal law to verify the enrollment of students who participate in Federal Title IV student aid programs (Federal grants and student loans) and/or who receive educational benefits through the Department of Veterans Affairs. It is the responsibility of the College to identify students who do not commence attendance or who stop attendance in any course for which they are registered and paid. Non-attendance is reported by each instructor, and can result in a student being administratively withdrawn from the class section. Please contact the Financial Aid Office for information regarding the impact of course withdrawals on financial aid eligibility.

ADDENDUM(s)

1. SRC Addendum (attached)

MTC Syllabus Addendum – 2012/2013 School Year

The following information is provided to help make you more aware of resources which may aid in your academic success. For additional information on these topics, please refer to the Catalog, the Student Handbook, and/or an MTC staff or faculty member.

Tutoring: Free one-on-one and group tutoring services are available for many of the classes you take at MTC. If you are having difficulties in a course, it is very important to immediately seek out solutions for your academic concerns. Falling behind will create additional problems quickly. For more information about Tutorial Services, please contact Kathy Rice in the Student Resource Center, room 183.

Your instructors want to see you succeed and are available to answer questions before, during and after class. Your study skills may also be enhanced by forming a study group, becoming friends with a classmate, preparing assignments early, managing your time using a weekly planner, and prioritizing “to do” lists.

Students with Disabilities: If you believe yourself to have a physical, learning or mental disability preventing you from being successful in your class, contact Mike Stuckey in the Student Resource Center. Students with certain disabilities may qualify for specific academic accommodations. Academic accommodations are considered and approved through the **Office of Students with Disabilities**.

You should inform your instructor the first week of classes of any medical or learning conditions that might impact the classroom or your ability to learn.

Drug/Alcohol & Mental Health Concerns: The SRC has a licensed mental health counselor on staff to guide you on getting help with personal matters that may distract you from performing well in your studies. Contact the SRC if you believe a counselor can be of assistance regarding topics such as persistent sadness, feeling overwhelmed, difficulty making a decision, anxiety, or substance abuse.

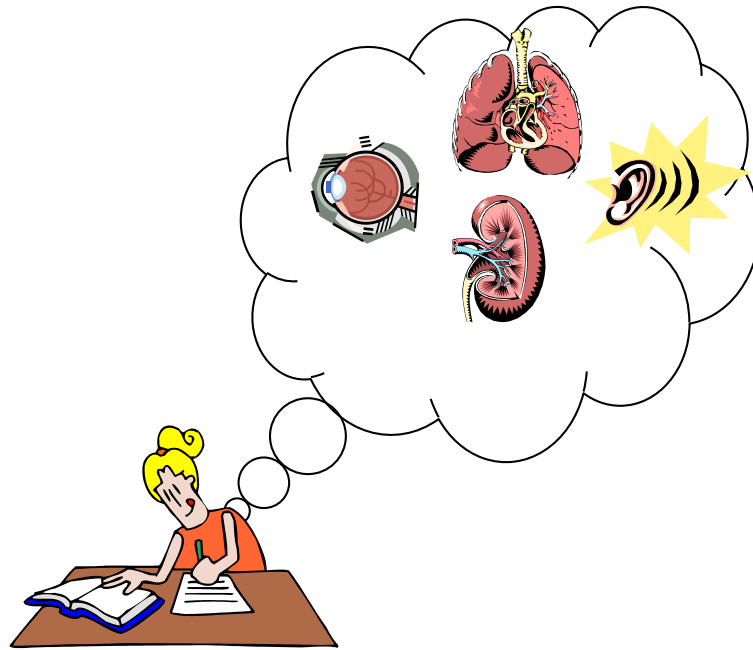
Semester Conversion: MTC has moved from the quarter system to 16-week semester terms. The college is devoted to making this transition as smooth as possible. Information about the semester conversion is available on MTC’s home page. Working closely with your academic advisor and MAPS (My Advising Plan for Semesters) is the best way to assure you’re making steady academic progress.

Academic Advising: It is in your very best interest to get to know your academic advisor. Not only is your advisor available to guide you in course selection, registration, and career planning, he/she can be helpful in discussing academic difficulties and personal goals. Communicate with your advisor on a regular basis. Your advisor needs to be considered a **significant** part of your life for the years ahead. If you are not sure of your advisor’s name or office location, check with your academic department’s dean or secretary.

Financial Aid: Regularly attending class is critical in achieving academic success. If you receive some form of financial aid, such as the Pell Grant and/or the Federal Direct Student Loan, **federal regulations require you to attend classes**. In part, this is why your instructor records attendance. Maintaining **satisfactory academic progress** (SAP) is important in preserving your future eligibility for financial resources. If you ever have questions or concerns, please contact the Office of Financial Aid.

MARION TECHNICAL COLLEGE

**ANATOMY AND PHYSIOLOGY II
LABORATORY OBJECTIVES
FALL SEMESTER**



ANATOMY OF THE EYE

After completing this lab, the student should be able to:

1. Locate and identify the structure of the human eye.
2. Compare cavities and chambers of the eye.
3. Describe aqueous and vitreous humor.
4. Compare and contrast the structure and function of extrinsic and intrinsic muscles of the eye.
5. Name and describe three coverings of the eye.
6. Explain the refraction of light rays within the eye.
7. Demonstrate common vision tests.
8. Dissect an animal eye specimen.

ANATOMY OF THE EAR

After completing this lab, the student should be able to:

1. Describe the anatomy of the three parts of the ear.
2. Explain the process of static and dynamic equilibrium.
3. Describe the process of hearing: roles of air, bone, membranes, and fluid.
4. Demonstrate common hearing tests.

ENDOCRINE SYSTEM

After completing this lab, the student should be able to:

1. Compare and contrast endocrine and exocrine glands.
2. Identify, locate, and describe the principle endocrine glands.
3. List the hormones, target cells, and general functions of the endocrine glands.
4. Cite the mechanisms by which the endocrine glands are stimulated to release their hormonal secretions.
5. Compare and contrast effects of major hormones on metabolism.

BLOOD; ARTERIES AND VEINS

After completing this lab, the student should be able to:

1. Name the major components of blood.
2. Compare the two main kinds of blood cells with regard to relative size, number, shape, formation, and general function.
3. Perform blood typing and blood counts.
4. Compare and contrast the structure and function of arteries and veins.
5. Identify the major arteries arising from the aorta and indicate body region they supply.
6. Identify the major veins emptying into the superior and inferior vena cava, and indicate the body regions drained.
7. Describe unique features of coronary circulation.

CARDIOVASCULAR SYSTEM

After completing this lab, the student should be able to:

1. Describe the human heart.
2. Differentiate parietal and visceral layers of pericardium.
3. Identify the major external and internal structures of the heart.
4. Trace the pathway of blood through the heart and lungs.
5. Name the main branches of coronary arteries.
6. Dissect an animal heart specimen.

RESPIRATORY SYSTEM

After completing this lab, the student should be able to:

1. Distinguish between internal and external respiration.
2. Describe the organs of the respiratory tract according to location, structure, and function.

DIGESTIVE SYSTEM

After completing this lab, the student should be able to:

1. Describe the layers of the gastrointestinal tract.
2. Describe the structures and functions of the principle gastrointestinal tract organs.
3. Describe the structures and functions of the principle accessory organs.
4. Define mechanical and chemical digestion.
5. List the major digestive enzymes and explain their action.
6. Describe the sequence of digestion.
7. Summarize the digestion of proteins, carbohydrates, and lipids.

DISSECTION OF THORACIC AND ABDOMINAL CAVITIES OF THE FETAL PIG

After completing this lab, the student should be able to:

1. Review anatomy of the heart and lungs.
2. Identify the diaphragm muscle and abdominal muscles.
3. Inspect and identify the organs of the abdominal cavity.
4. Identify the male and female reproductive organs in the fetal pig.
5. Identify the structures of the urinary system.

EXCRETORY SYSTEM

After completing this lab, the student should be able to:

1. Describe the structures and functions of the urinary system.
2. Describe the gross anatomy and microscopic structures of the kidneys.
3. Identify the components of the nephron.
4. Discuss the components of a urinalysis.
5. Dissect an animal kidney specimen.

REPRODUCTIVE SYSTEM - MALE

After completing this lab, the student should be able to:

1. Identify structures and functions of the male reproductive system.

REPRODUCTIVE SYSTEM - FEMALE

After completing this lab, the student should be able to:

1. Identify structures and functions of the female reproductive system.
2. Identify the microscopic structure of the ovary.
3. Identify the fundus, body, and cervical regions of the uterus.

MARION TECHNICAL COLLEGE
 ANATOMY & PHYSIOLOGY II LAB
 FALL SEMESTER - 2012
LABORATORY SCHEDULE

Aug. 28 LAB I	Anatomy of the Eye Marieb: Chapter 15	Models, Charts
Aug. 30 LAB II	Anatomy of the Eye Anatomy of the Ear Marieb: Chapter 15	Models, Charts Dissection of Eye Specimen
Sept. 3 Sept. 4	Labor Day – No Classes No SCI 1250 lecture or lab	
Sept. 6 LAB III	Anatomy of the Ear Marieb: Chapter 15	Models, Charts Film: Eyes and Ears
Sept. 11 LAB IV	Endocrine System—Glands and Hormones Marieb: Chapter 16	Models, Charts
Sept. 13 LAB V	Endocrine System Marieb: Chapter 16	Models, Charts Film: Hormones: Messengers
Sept. 18 LAB VI	Endocrine System Marieb: Chapter 16	Models, Charts
Sept. 20 LAB VII	Endocrine System Marieb: Chapter 16	Models, Charts
Sept. 25 LAB VIII	Blood Marieb: Chapter 17	Models, Charts Blood Tests
Sept. 27 LAB IX	Blood Vessels Marieb: Chapter 19	Models, Charts Film: Blood
Oct. 2 LAB X	Anatomy of the Heart Marieb: Chapter 18	Models, Charts Film: The Circulatory System
Oct. 4 LAB XI	Anatomy of the Heart Marieb: Chapter 18	Models, Charts Dissection of Heart Specimen
Oct. 9 LAB XII	Anatomy of the Respiratory System Marieb: Chapter 22	Models, Charts
Oct. 11 LAB XIII	Anatomy of the Respiratory System Marieb: Chapter 22	Film: Breathing
Oct. 16 LAB XIV	Anatomy of the Respiratory System Marieb: Chapter 22	Models, Charts

Oct. 18 LAB XV	Anatomy of the Digestive System Marieb: Chapter 23	Models, Charts
Oct. 23 LAB XVI	Anatomy of the Digestive System Marieb: Chapter 23	Models, Charts Film: Digestion: Breakdown
Oct. 25 LAB XVII	Dissection of Thoracic and Abdominal Cavities Handout	Dissection of Fetal Pig Film: Anatomy of the Fetal Pig
Oct. 30 LAB XVIII	Digestive System: Accessory Glands and Enzymes of Digestion Marieb: Chapter 23	
Nov. 1 LAB XIX	Anatomy of the Urinary System Marieb: Chapter 25	Models, Charts Film: The Urinary Tract: Water!
Nov. 6 LAB XX	Anatomy of the Urinary System Marieb: Chapter 25	Models, Charts
Nov. 8 LAB XXI	Anatomy of the Urinary System Marieb: Chapter 25	Models, Charts Dissection of Kidney Specimen
Nov. 12 Nov. 13	 Veterans' Day - No Classes No SCI 1250 lecture or lab 	
Nov. 15 LAB XXII	Anatomy of the Male Reproductive System Marieb: Chapter 27	Models, Charts Film: Shares in the Future
Nov. 20 LAB XXIII	Anatomy of the Male Reproductive System Marieb: Chapter 27	Models, Charts
Nov. 22	<i>Thanksgiving - No Classes</i>	
Nov. 27 LAB XXIV	Anatomy of the Female Reproductive System Marieb: Chapter 27	Models, Charts Film: A New Life
Nov. 29 LAB XXV	Anatomy of the Female Reproductive System Marieb: Chapter 27	Models, Charts Dissection of Male/Female Pelvic Viscera
Dec. 4 LAB XXVI	Review for Lab Practical	
Dec. 6 LAB XXVII	PRACTICAL EXAMINATION	

¹ Approved TAG and OTM courses carry the guarantee that the courses and their credits will transfer and apply toward the major at any of Ohio's public institutions of higher education, provided they were taken when the courses were equivalent. Additional Ohio transfer information may be obtained at <http://regents.ohio.gov/transfer/>