

# MANCHESTER REGIONAL HIGH SCHOOL

ANATOMY & PHYSIOLOGY



Adopted May, 2016

**Manchester Regional High School  
District Mission Statement**

*The mission of Manchester Regional High School is to produce respectful, responsible and well-rounded graduates who possess the knowledge and skills to become contributing members of society and life-long learners.*

*Highly qualified, collaborative and innovative staff address the needs of a diverse school community in a stimulating and nurturing environment.*

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## MANCHESTER REGIONAL HIGH SCHOOL

### COURSE DESCRIPTION: Anatomy & Physiology

Designed for students who have completed Biology, Human Anatomy & Physiology is a full year's course that deals with the human body and its functions. To understand the human body, it is necessary to understand how its parts are put together and how they work in conjunction with one another. The course will begin with a review of the cell, the levels of organization, anatomical terminology, tissue types, and overview of the eleven body systems. After this foundation has been laid, the following individual systems will be studied in more detail:

- 1) Integumentary, 2) Skeletal, 3) Muscular, 4) Nervous, 5) Endocrine, 6) Cardiovascular,
- 7) Lymphatic, 8) Respiratory, 9) Digestive, 10) Urinary, and 12) Reproductive.

### COURSE DATA:

Length of course: Full year

Credits: Six

Periods per week: Six

Classification: Grade 11-12

Prerequisite: Biology – Grade of “C” or better

### EVALUATION:

The purposes of evaluation are to provide information about student progress and to determine whether students have learned the subject matter, which has been taught. Teachers will evaluate student progress by utilizing teacher-made quizzes and tests, oral questioning, class participation. Other evaluative criteria will include homework, special projects, special exams and other school records.

**NOTE:** The following pacing guide was developed during the creation of these curriculum units. The actual implementation of each unit may take more or less time. Time should also be dedicated to preparation for benchmark assessments, and analysis of student results on the same. A separate document is included at the end of this curriculum guide with suggestions and resources related to State Assessments (if applicable). It is highly recommended that teachers meet throughout the school year to coordinate their efforts in implementing the curriculum and preparing students for benchmark assessments in consideration of both the School and District calendars.

**Manchester Regional High School Curriculum Guide**

**Content Area: Science**

**Course Title: Anatomy & Physiology**

**Grade Level: 11/12**

**Unit 1: Orientation of the Human Body**

**6 Weeks**

**Unit 2: Covering, Support, and Movement**

**7 Weeks**

**Unit 3: Coordination and Control**

**8 Weeks**

**Unit 4: Fluid Systems of the Human Body**

**5 Weeks**

**Unit 5: Essential Needs of the Body**

**6 Weeks**

**Unit 6: Reproduction and Human  
Development**

**2 Weeks**

<b>Unit 1 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 1 Title – Orientation of the Human Body</b>	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<p><b>Unit Summary and Rationale</b> – Students will be able to identify, define, and describe how orientation helps map the human body through the following aspects: language of anatomy, levels of structural orientation, system integration, and homeostasis. Understand how the physiological processes of each system are dependent on cell structure and the function of organelles. Summarize the mechanisms involved in movement across membranes and understand the role of DNA and RNA in the cell. Compare and contrast the basic tissue types and the cells from which they are composed.</p>	
<p><b>Interdisciplinary Connections</b> – Science and Language Arts: journal writing; open-ended extended response questions.</p>	
<p><b>21<sup>st</sup> Century Themes</b> – Health Literacy; Media Literacy; Information Literacy</p>	<p><b>21<sup>st</sup> Century Skills</b> – Creativity/Innovation Critical Thinking/Problem Solving Life &amp; Career Skills</p>
<p><b>Unit Essential Questions</b></p> <ul style="list-style-type: none"> <li>• How does anatomy relate to physiology?</li> <li>• Why is homeostasis so important?</li> <li>• What is the necessity of learning the language of anatomy?</li> <li>• What are the levels of organization?</li> <li>• What is the difference between active and passive transport?</li> <li>• Which of the tissue types are most widely distributed?</li> </ul>	<p><b>Unit Enduring Understandings</b></p> <ul style="list-style-type: none"> <li>• The human body has many structural and functional levels.</li> <li>• The plasma membrane acts as a selective barrier.</li> <li>• The nucleus directs all the cell’s activities</li> <li>• The characteristics of tissues contribute to the functions of organs.</li> </ul>

<b>Learning Targets</b>	
<p><b>Unit Proficiencies</b></p> <p>After completing this unit of study, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Successfully describe human body parts, planes, and areas using appropriate terminology</li> <li>2. Properly demonstrate the use of directional and organizational terms associated with the human body.</li> <li>3. Identify all tissue and cellular structures and functions with the proper use of microscopes.</li> </ol>	<p><b>Next Generation Science Standards</b></p> <p>HS-LS1-1            HS-LS1-2            HS-LS1-3</p>

<b>Labs and Projects</b>	
<b>All labs require the use of the Chromebooks</b>	
<p>Name of lab/project. Peter the Pickle Lab</p>	<p><b>Practice Standards</b></p> <p>HS-LS1-2</p>
	<p><b>Resources Required</b></p> <p>Pickles            Dissecting tools            Toothpicks            Gum drops</p>
<p>Name of lab/project. Diffusion &amp; Osmosis Lab</p>	<p><b>Practice Standards</b></p> <p>HS-LS1-2            HS-LS1-3</p>
	<p><b>Resources Required</b></p> <p>Dialysis tubing            IKI            Glucose            Sucrose            Starch            Beakers            Water</p>

Name of lab/project. Restriction Cleavage of DNA Analysis	<b>Practice Standards</b> HS-LS1-1 HS-LS3-2
	<b>Resources Required</b> Cleaved DNA Buffer Electrophoresis boxes Power supplies
Name of lab/project. Examination of Tissue Types	<b>Practice Standards</b> HS-LS1-1 HS-LS1-2
	<b>Resources Required</b> Microscopes Prepared slides



<b>Unit 2 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 2 Title – Coverings, Support and Movement</b>	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<p><b>Unit Summary and Rationale</b> – Students will be able to identify, define, describe, and analyze the composition of skin, its tissues and its structures.</p> <ul style="list-style-type: none"> <li>- Learn the functions of skin and its roles in homeostasis. Study both microscopic and macroscopic feature of bones.</li> <li>- Analyze the role of bones in relation to growth repair and homeostasis.</li> <li>- Differentiate the bones of the axial and appendicular skeletons.</li> <li>- Study the names and important markings of bones of both the axial and appendicular skeletons.</li> <li>- Compare and contrast types of joints and their role in movement</li> <li>- Study the function of muscles from a cellular, tissue and finally whole muscle level.</li> <li>- Learn the name and functions of major muscles in the human body.</li> <li>- Integrate understanding of muscles and skeleton to explain movement.</li> </ul>	
<b>Interdisciplinary Connections</b> – Science and Language Arts: journal writing; open-ended extended response questions.	
<b>21<sup>st</sup> Century Themes</b> – Health Literacy; Media Literacy; Information Literacy	<b>21<sup>st</sup> Century Skills</b> – Creativity/Innovation Critical Thinking/Problem Solving Life & Career Skills
<p><b>Unit Enduring Questions</b></p> <ul style="list-style-type: none"> <li>• What structures comprise the skin?</li> <li>• What role does the skin play in homeostasis?</li> <li>• What factors determine skin color?</li> <li>• How does the study of the structure and function of bones and muscles help us understand the complexity of the human’s ability to produce such precise movement?</li> <li>• What information can we learn by studying the dysfunction of the skeletal and muscular systems to help us in future choices to keep these systems healthy?</li> </ul>	<p><b>Unit Enduring Understandings</b></p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>• Skin functions include protection from many factors</li> <li>• Skin is essential to controlling how the body interacts with external environments.</li> <li>• The effect different factors have on the occurrence of aging and cancers.</li> <li>• Skeletal System provides a framework for all vital organs of the body. It serves as areas for muscle attachment, articulation of joints for movement, storage of substances for blood cell formation and enables continuity of life.</li> <li>• The structure and function of the skeletal and muscular system do not work independently of each other but have a relationship with other systems in the human body.</li> <li>• Our ability to move requires a complex interaction between the skeletal, muscular, nervous and a variety of other systems as well.</li> </ul>

<b>Learning Targets</b>	
<p><b>Unit Proficiencies:</b> After completing this unit of study, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Describe how the structure of bone relates to its function</li> <li>• Describe how the bones provide a lever system and the various types of joints and movements that they can provide</li> <li>• Describe how the structure of muscle relates to its function</li> <li>• Identify all of the microscopic and macroscopic structures of muscle</li> <li>• Identify the majority of superficial muscles of the human body and the origin and insertion points as well as the actions that these muscles produce</li> <li>• Identify the structures and functions of the integumentary system</li> <li>• Understand the importance of maintaining the health of the integumentary system.</li> <li>• Identify all the bones and important markings of the skeletal system</li> <li>• Visually represent how the muscle contraction happens from neural stimulation to the final stages of a contraction.</li> <li>• Describe the function(s) of the skeletal system.</li> <li>• Compare the structure and function of compact and spongy bones.</li> </ul>	<p><b>Next Generation Science Standards</b></p> <p>HS-LS1-1 HS-LS1-2 HS-LS1-3 HS-LS3-1</p>

**Labs and Projects**

**All labs require the use of the Chromebooks**

Name of lab/project: Use touch sensitivity to determine loci of receptors and adaptability	<b>Practice Standards</b> HS-LS1-2
	<b>Resources Required</b> Blindfolds Lugol's Iodine Isopropyl alcohol Toothpicks
Name of lab/project: Chicken bone dissection to examine the internal structure of the bone	<b>Practice Standards</b> HS-LS1-2 HS-LS1-3
	<b>Resources Required</b> Chicken bones Vinegar Dissecting tools/pans Plastic containers Water
Name of lab/project: Create and construct select skeletal muscles using clay and MANEKINS	<b>Practice Standards</b> HS-LS1-1
	<b>Resources Required</b> Manekin Models Clay
Name of lab/project: Examination of skin layers	<b>Practice Standards</b> HS-LS1-3
	<b>Resources Required</b> Microscopes Prepared slides

<b>Unit 3 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 3 Title – Coordination and Control</b>	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<p><b>Unit Summary and Rationale:</b> This unit will provide students with an understanding of the integration and interrelation of the nervous system with all other body systems. They will become aware of how the nervous system is an integral part of comprehending how the body functions as a whole and how these control mechanisms provide necessary adjustments to meet the changing internal and external environmental conditions of the body. Identify the organs and mechanisms of the special senses of smell, taste, vision, equilibrium and hearing. Identify the major endocrine glands and their hormones’ main actions and regulatory functions.</p>	
<p><b>Interdisciplinary Connections – Science and Language Arts:</b> journal writing; open-ended extended response questions.</p>	
<p><b>21<sup>st</sup> Century Themes – Health Literacy; Media Literacy; Information Literacy</b></p>	<p><b>21<sup>st</sup> Century Skills – Creativity/Innovation Critical Thinking/Problem Solving Life &amp; Career Skills</b></p>
<p><b>Unit Essential Questions</b></p> <ul style="list-style-type: none"> <li>• How does the nervous system control all systems of the human body?</li> <li>• What influence does the endocrine system have on growth and development, sexual maturation and reproduction, and the maintenance of homeostasis of many body systems?</li> </ul>	<p><b>Unit Enduring Understandings</b></p> <ul style="list-style-type: none"> <li>• The nervous and endocrine system are the controlling systems of the body. Each system plays a specific role but all systems work together to provide homeostasis.</li> <li>• The endocrine system controls reproduction, growth and development, body defenses, metabolic processes, and blood chemistry. Through the use of hormones, the endocrine system maintains homeostasis.</li> </ul>

**Learning Targets**

**Unit Proficiencies:**

After completing this unit of study, the student will be able to:

- Identify the anatomy of the eye, ear, nose, and tongue. Distinguish between neurons and neuroglia on the basis of their structure and function.
- Discuss the events that generate an action potential in the membranes of nerve cells.
- Discuss the structure and function of the spinal cord.
- Describe the major regions of the brain and describe their functions.
- Discuss the interrelationships among the nervous system and other organ systems.
- Compare the major chemical classes of hormones.
- Explain the general mechanism of hormonal action.
- Describe how endocrine glands are controlled
- Discuss the location, hormones, and functions of the following glands and tissues: pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pineal gland, pancreas, thymus gland, testes and ovaries.
- Explain how hormones interact to produce coordinated physiological responses.
- Explain how the endocrine system responds to stress.

**Next Generation Science Standards**

- HS-LS1-1
- HS-LS1-2
- HS-LS1-3

<b>Labs and Projects</b> <b>All labs require the use of the Chromebooks</b>	
Name of lab/project. Perform a dissection of a sheep brain	<b>Practice Standards</b> HS-LS1-2
	<b>Resources Required</b> Dissecting tools Sheep brains
Name of lab/project. Create a model of the brain using clay for the MANEKINS	<b>Practice Standards</b> HS-LS1-2 HS-LS1-3
	<b>Resources Required</b> Manekins Clay
Name of lab/project. Perform a cow eye dissection to determine the internal anatomy	<b>Practice Standards</b> HS-LS1-1
	<b>Resources Required</b> Dissecting tools Cow's eyes
Name of lab/project. Present a Power point presentation describing a specific endocrine gland disorder	<b>Practice Standards</b> HS-LS1-3
	<b>Resources Required</b> Computers

<b>Unit 4 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 4 Title – Fluid Systems of the Body</b>	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<p><b>Unit Summary and Rationale</b> – This unit will provide students with an understanding of the transport system of the body. Each component of blood and its function will be examined. An examination of the structures and functions of the heart will be discussed. The identification of the structures and functions of the lymphatic system will be covered. Students will study both nonspecific and specific defenses of immunity and analyze the way that the two levels of defense work together in the immune responses.</p>	
<p><b>Interdisciplinary Connections</b> – Science and Language Arts: journal writing; open-ended extended response questions.</p>	
<p><b>21<sup>st</sup> Century Themes</b> – Health Literacy; Media Literacy; Information Literacy</p>	<p><b>21<sup>st</sup> Century Skills</b> – Creativity/Innovation Critical Thinking/Problem Solving Life &amp; Career Skills</p>
<p><b>Unit Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• Why is blood essential to the body?</li> <li>• How is blood circulated throughout the body?</li> <li>• What happens when homeostasis is not maintained?</li> <li>• How does exercise and disease affect the circulatory and lymphatic systems?</li> </ul>	<p><b>Unit Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Blood supplies all cells in the body with nutrients and removes waste.</li> <li>• The heart is the pump that cycles the blood through the body (systemic) and to the lungs (pulmonary circulation).</li> <li>• Study circulatory physiology including blood pressure, blood flow, hormonal control, and the effect of exercise on circulatory function.</li> <li>• The lymphatic system plays a key role in protecting our body from foreign invaders and is vital for our health.</li> </ul>

**Learning Targets**

**Unit Proficiencies**

After completing this unit of study, the student will be able to:

- Describe the composition and function of blood and its importance in the body.
- List blood cell types comprising the formed elements and describe the major functions of each type.
- Analyze the steps in the process of coagulation.
- Identify the major structures and functions of the heart.
- Trace the pathway of blood through the heart.
- Identify the structures and functions of the lymphatic system
- Outline the physiology of the body's defenses.
- How to differentiate between the ABO and Rh blood groups.
- The location of the heart in the body and identify its major anatomical structures.
- The pathway of blood through the heart.
- The importance of the heart valves.

**Next Generation Science Standards**

- HS-LS1-1
- HS-LS1-2
- HS-LS1-3



**Labs and Projects**

**All labs require the use of the Chromebooks**

Name of lab/project. Sheep heart dissection	<b>Practice Standards</b> HS-LS1-2
	<b>Resources Required</b> Dissecting tools Sheep's hearts
Name of lab/project. Blood pressure lab using equipment	<b>Practice Standards</b> HS-LS1-2 HS-LS1-3
	<b>Resources Required</b> Blood pressure cuffs stethoscopes

<b>Unit 5 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 5 Title – Essential Needs of the Body</b>	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<p><b>Unit Summary and Rationale</b> – This unit will enable the students to be able to identify and describe the structures and functions of the respiratory, digestive, and urinary system. Describe the physiology of the respiratory system including ventilation, gas exchange and respiratory control. The organs of the alimentary canal will be discussed in detail along with their functions such as; ingestion, propulsion, mechanical digestion, chemical digestion absorption and defecation. The accessory organs will be discussed and their role in digestion will be explored. These include; salivary glands, liver, pancreas, teeth, tongue and gall bladder. The basic nutrients will be presented and the utilization of those nutrients will be discussed. Students will become aware of how the kidneys regulate homeostasis in the body. An in depth review of the kidney, ureters, urinary bladder and urethra will be completed. Students will investigate how the kidney filters the blood, manufactures urine, retains needed ions and nutrients, rids the body of toxins, and regulates blood volume.</p>	
<p><b>Interdisciplinary Connections</b> – Science and Language Arts: journal writing; open-ended extended response questions.</p>	
<p><b>21<sup>st</sup> Century Themes</b> – Health Literacy; Media Literacy; Information Literacy</p>	<p><b>21<sup>st</sup> Century Skills</b> – Creativity/Innovation Critical Thinking/Problem Solving Life &amp; Career Skills</p>
<p><b>Unit Essential Questions</b></p> <ul style="list-style-type: none"> <li>• How does the digestive system provide the body with the organic molecules necessary to fuel the body’s cells and provide the building blocks for cell growth and repair?</li> <li>• How does the respiratory system provide the body with the oxygen and get rid of carbon dioxide necessary to fuel the body’s cells.</li> <li>• How are the kidneys perfect examples of a homeostatic organ?</li> </ul>	<p><b>Unit Enduring Understandings</b></p> <ul style="list-style-type: none"> <li>• All living organisms must obtain nutrients from their environment to sustain life. These substances are used as raw materials for synthesizing essential compounds or are decomposed to provide the energy that cells need to continue functioning.</li> <li>• The kidneys filter fluid from the bloodstream and process the filtrate. They excrete wastes and excess ions, rid the body of drugs and toxins, and retain needed ions and nutrients. They manufacture urine and regulate volume and chemical makeup of blood.</li> </ul>

**Learning Targets**

**Unit Proficiencies**

After completing this unit of study, the student will be able to:

*Students will know...*

- The major structures and important functions of the respiratory, digestive, and urinary systems.
- Factors that affect the health of the essential needs of the body
- The physiology of the respiratory system including ventilation, gas exchange and respiratory control.
- The way the urinary system integrates with other body systems to maintain balance of fluids, electrolytes, and pH.
- How ingested materials are propelled through the digestive tract.
- Describe the digestion and absorption of carbohydrates, lipids and proteins.
- The structure and functions of the pancreas, liver and gall bladder, and explain how their activities are regulated.
- The processes involved in gas exchange.
- The structure of the nephron and the process involved in urine formation.

**Next Generation Science Standards**

HS-LS1-1

HS-LS1-2

HS-LS1-3

<b>Labs and Projects</b> <b>All labs require the use of the Chromebooks</b>	
Name of lab/project. <ul style="list-style-type: none"> <li>Measurement of respiratory volumes</li> </ul>	<b>Practice Standards</b> HS-LS1-2
	<b>Resources Required</b> Balloons Rulers calculators
Name of lab/project. <ul style="list-style-type: none"> <li>Fate of Your Food to analyze enzyme effects and outline their metabolic activity.</li> </ul>	<b>Practice Standards</b> HS-LS1-2 HS-LS1-3
	<b>Resources Required</b> Poster board Markers textbooks
Name of lab/project. <ul style="list-style-type: none"> <li>Digestion Simulation Lab</li> </ul>	<b>Practice Standards</b> HS-LS1-1
	<b>Resources Required</b> Dialysis tubing Enzyme solutions Water bath Biurets Benedicts pH paper IKI Scales
Name of lab/project. <ul style="list-style-type: none"> <li>Urinalysis lab</li> </ul>	<b>Practice Standards</b> HS-LS1-3
	<b>Resources Required</b> Simulated urine solutions

<b>Unit 6 Overview</b>	
<b>Content Area – Science</b>	
<b>Unit 6 Title –</b> Reproduction and Human Development	
<b>Target Course/Grade Level – Anatomy &amp; Physiology 11-12</b>	
<b>Unit Summary and Rationale</b> – This unit will provide students with an understanding of the anatomy of both male and female reproductive systems. Analyze the processes of spermatogenesis and oogenesis from a cellular and hormonal perspective. Students will study the stages of fetal development from fertilization through postnatal development.	
<b>Interdisciplinary Connections</b> – Science and Language Arts: journal writing; open-ended extended response questions.	
<b>21<sup>st</sup> Century Themes</b> – Health Literacy; Media Literacy; Information Literacy	<b>21<sup>st</sup> Century Skills</b> – Creativity/Innovation Critical Thinking/Problem Solving Life & Career Skills
<b>Unit Essential Questions</b> <ul style="list-style-type: none"> <li>• What influence does the endocrine system have on growth and development, sexual maturation and reproduction, and the maintenance of homeostasis of many body systems?</li> <li>• What structural differences are there between male and female reproductive anatomy?</li> <li>• What is the importance of maintaining a healthy lifestyle during pregnancy?</li> </ul>	<b>Unit Enduring Understandings</b> <i>Students will understand that...</i> <ul style="list-style-type: none"> <li>• Of all of the organ systems of the body, the reproductive system is not essential to the life of an individual to ensure survival, but is essential to ensure the survival of the species.</li> <li>• In order for a fetus to develop healthy, the mother must follow strict guidelines.</li> </ul>

<b>Learning Targets</b>	
<p><b>Unit Proficiencies</b></p> <p>After completing this unit of study, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Describe the components of the male and female reproductive system.</li> <li>• Detail the physiological process involved in the ovarian and menstrual cycles.</li> <li>• Outline the stages of fertilization, implantation, fetal development, and child birth.</li> </ul>	<p><b>Next Generation Science Standards</b></p> <p>HS-LS1-1            HS-LS1-2            HS-LS1-3            HS-LS3-1            HS-LS3-2</p>

<b>Labs and Projects</b>	
<b>All labs require the use of the Chromebooks</b>	
<p>Name of lab/project.            Watch the movie "Life's Greatest Miracle" and complete questions.</p>	<p><b>Practice Standards</b></p> <p>HS-LS1-2</p>
	<p><b>Resources Required</b></p> <p>DVD</p>
<p>Name of lab/project.            Perform a dissection of a fetal pig</p>	<p><b>Practice Standards</b></p> <p>HS-LS1-2            HS-LS1-3</p>
	<p><b>Resources Required</b></p> <p>Preserved fetal pig            Dissecting tools &amp; trays</p>

**Standards:**

**HS-LS1-1** - Explain the connection between the sequence and the subcomponents of a biomolecule and its properties.

**HS-LS1-2** - Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

**HS-LS1-3** - Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

**HS-LS3-1** - Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring

**HS-LS3-2** - Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

**Diverse Learners (ELL, Special Ed, Gifted & Talented)**- Differentiation strategies may include, but are not limited to, learning centers and cooperative learning activities in either heterogeneous or homogeneous groups, depending on the learning objectives and the number of students that need further support and scaffolding, versus those that need more challenge and enrichment. Modifications may also be made as they relate to the special needs of students in accordance with their Individualized Education Programs (IEPs) or 504 plans, or English Language Learners (ELL). These may include, but are not limited to, extended time, copies of class notes, refocusing strategies, preferred seating, study guides, and/or suggestions from special education or ELL teachers.