Syllabus

Course Code: BIOL 108 **Title: Human Biology**

Institute: S.T.E.M. **Department: Biology**

Course Description: This survey course is intended to meet a laboratory science requirement for non-science majors. Through classroom and laboratory experiences, the student will demonstrate a basic understanding of how the human body functions in healthy and diseased states. Included in the course is a broad overview of human anatomy, physiology and organization. Course lecture and discussions also include ethical biomedical issues.

Prerequisites: Grade of "C" or higher in MATH 012, MATH 015 or passing score in computation on Basic Skills Test and READ 095 or passing score in reading on Basic Skills Test, ENGL 095 or passing score in writing on Basic Skills Test

Corequisites:

Prerequisites or corequisites:

Credits: 4 **Lecture Hours: 3** **Lab/Studio Hours: 1**

Required Textbook/Materials: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition; Pearson Publications Or online text and web access, or other edition with instructor permission

Laboratory Manual

Additional Time Requirements: Additional weekly lab time is required. (See instructor)

Additional Support/Labs: See https://www.brookdalecc.edu/academic-tutoring/

Course Learning Outcomes: The student will be able to:
- Demonstrate comprehension of basic concepts in anatomy and physiology, chemistry of life, cell structure & function, histology, anatomy & physiology of selected organ systems
- Apply basic concepts in human anatomy and physiology to health and disease states.
- Apply principles of Scientific Method to bioethics through discussions of the use of animals and human test subjects in experimentation, stem cells or GMO, euthanasia, environmental ethics and other current issues.

Course Content:

UNIT ONE: INTRODUCTION TO HUMAN BIOLOGY
UNIT TWO: THE CHEMISTRY OF LIFE
UNIT THREE: THE CELL – STRUCTURE AND FUNCTION
UNIT FOUR: THE INTEGUMENTARY SYSTEM
UNIT FIVE: THE SKELETAL SYSTEM
UNIT SIX: THE MUSCULAR SYSTEM
UNIT SEVEN: THE NERVOUS SYSTEM
UNIT EIGHT: THE CARDIOVASCULAR SYSTEM
UNIT NINE: THE LYMPHATIC SYSTEM
UNIT TEN: THE REPRODUCTIVE SYSTEM

Department Policies:

Attendance during class and laboratory sessions is strongly recommended for optimum performance in biology courses.

Lecture exams will be given in class.

Laboratory practicals will be given during laboratory sessions, in accordance with schedules provided by the Laboratory Instructor. Exams and practicals must be taken at the times designated by the instructor or Laboratory Instructor. A student who misses a lecture exam or laboratory practical must provide prior notification and proper documentation in order to take the exam or laboratory practical. The acceptance of said prior notification and proper documentation will be determined by the instructor.

Documentation must be provided within one week of the student's return to the classroom for a make-up exam or laboratory practical to be scheduled. A student who is unable to provide proper documentation for a missed exam or laboratory practical will be given a grade of zero for that exercise. Students may not re-take exams or laboratory practicals on which they perform poorly.

Requirements for the completion of laboratory are listed in the laboratory responsibility sheets for individual courses.

Requirements for course completion are listed in individual instructor syllabi.

Grading Standard:

A student must have an average of 65% or better for the classroom component and an average of 65% or better for the laboratory component of the course in order to earn a passing grade for the course. Laboratory work is weighted as 25% of the total grade for the course. Upon completion of the course, grades will be assigned as follows:

A = 92 - 100%
A- = 89 - 91%
B+ = 86 - 88%
B = 82 - 85%
B- = 79 - 81%
C+ = 76 - 78%
C = 70 - 75%
D = 65 - 69%
F = <65%

Unit examination results will be reported as the grade assigned by the faculty calculated to the first decimal place. These grades will be weighed according to course grading policy. In calculating the course grade, 0.5 will round up to the next numerical grade and 0.4 will round down to the next lower numerical grade.

A grade of C or better is required in all pre-requisite courses. Career studies courses must have a grade of C or better to count toward the Mathematics / Science Program – Biology Option.

Students are permitted to withdraw from the course without penalty until approximately 80% of the semester is complete. Please see term schedule for the exact deadline.

At the end of the semester, application for an Incomplete may be made if a student with proper documentation needs to complete no more than one lecture exam and/or one laboratory practical. The granting of an Incomplete is at the discretion of the instructor.

College Policies:

As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our College values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit www.brookdalecc.edu/support.

For information regarding:

- Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the student handbook and catalog**.**

Notification for Students with Disabilities:

Brookdale Community College offers reasonable accommodations and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Accessibility Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability and request specific accommodations or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

Mental Health:

24/7/365 Resources:

- Monmouth Medical Center Psychiatric Emergency Services at **(732) 923-6999**
- 2nd Floor Youth Helpline – Available to talk with you about any problem, distress, or hardship you are experiencing. Call or text at **888-222-2228** or visit the website at https://www.2ndfloor.org/

Faculty Counselors:

- Students who need to make an appointment with a faculty counselor can do so by calling 732-224-1822 (non-emergency line) during business hours. Faculty counselors are licensed mental health professionals who can assist students and refer them to other mental health resources.

Diversity Statement:

Brookdale Community College fosters an environment of inclusion and belonging. We promote a safe and open culture, encourage dialogue respecting diverse perspectives informed by credible sources, and uphold the virtues of civil discourse. We celebrate all identities with the understanding that ultimately, diversity, equity, and inclusion cultivate belonging and make us a stronger Brookdale community.

**The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arise.*

BIOL 108	Human Biology	# 1 of 11 Units	4
Course	Title		Credits

Name of Unit: **INTRODUCTION TO HUMAN BIOLOGY**

Unit Objective: Discuss the study of biology; describe the characteristics that distinguish living from the non-living and list and briefly describe the features that humans share with other organism, and those which are unique to humans. Describe science as a human endeavor, and as a method for determining truth. Discuss the role of science in society. Introduce bioethics in the use of humans and animals in scientific testing.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition

Pearson Chapter 1- Human Biology, Science and Society

Laboratory Manual

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: Two Weeks. One week chapter 1, One week Bioethics

Learning Objectives	**Required Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. List and describe the characteristics of life.	page 5-6
2. Discuss classification, how humans fit into the natural world.	page 7
3. List and briefly describe the characteristics of humans.	page 8
4. List and briefly describe the levels of human life	page 9
5. Describe science as a process, and describe scientific methods	page 11-14
6. Scientific method and Ethics: Group projects and presentations examining the many sides of these controversial ethical issues Groups of 2-5 students choose one topic to research and present visual and oral by term's end.	pages 2; 10
a. Genetic Modification of Organisms: potential harm and benefits.	pages 472-474
b. Human or Animal Subjects in medical research: the benefits and abuses	independent research
c. Environment: and human ethical imperative human impacts, problems and solutions: the science and the ethics.	pages 541-555
Other group topics by approval: d. Transplant ethics	pages 100-101
e. assisted suicide and euthanasia	independent research
f. stem cell research	pages 47-49
7. Complete the Laboratory Exercise on Scientific Method	

BIOL 108	Human Biology	# 2 of 11 Units	4
Course	Title		Credits

Name of Unit: **THE CHEMISTRY OF LIFE**

Unit Objective: Understand the basic concepts of chemistry that are related directly to the function of the cell as a living system. Identify the structure and function of organic molecules common to all systems of the human body.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter Two: The Chemistry of living things

Method of Evaluation: Unit Exam, Laboratory exercises and Practicals

Estimated Time To Achieve: One week

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Discuss the role of protons, neutrons and electrons in the atom, the fundamental unit of all matter. Include a comparison of the mass, charge and location of each subatomic particle.	pages 24-- 25
2. Compare and contrast an atom with an ion, element, molecule, and compound.	pages 27--28
3. Identify the three types of chemical bonds: covalent, ionic and hydrogen bonds	pages 26--30 Table 21. page 27
4. Identify the principal chemical elements found in the human body.	Table 2.2 on page 29
5. Describe the characteristics of water and state its significance to living organisms.	pages 30--32
6. Define pH and describe how it is measured. Cite examples of substances that act as acids and others which act as bases. Identify and discuss the role of buffers.	page 32 Figure 2.10 p. 32
7. Identify and describe the structure of carbohydrates, lipids and proteins, and explain the important functions of these molecules common to all living cells.	pages 35--43
8. Explain the role of Enzymes and ATP in the body.	pages 42, 44
9. Explain the roles of DNA and RNA in the body	page 43
10. Discuss how diabetes impacts glucose homeostasis, the growing diabetes epidemic, its prevention & treatment	Page 317--318
11. Complete the Unit Laboratory Exercise Food chemistry and Digestion	

BIOL 108	Human Biology	# 3 of 11 Units	4
Course	Title		Credits

Name of Unit: **THE CELL: STRUCTURE, FUNCTION, REPRODUCTION**

Unit Objective: Identify and describe the structures and functions of the component parts of a typical human cell. Discuss the process of cell division and its role in growth and repair processes in the body.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter 3 -- Structure and Function of Cells;; Chapter 17-- Cell Reproduction

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One Week

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Discuss the importance of cells and the controversy of stem cells.	Page 47--49
2. Compare prokaryotic with eukaryotic cells	page 50
3. Locate the following structures on a diagram or electron micrograph of the cell, and describe the functions of each Nucleus — nuclear envelope & nucleolus Lysosomes — cytoplasm cytoskeleton — vesicles mitochondria — ribosomes Cilia and flagella — centrioles endoplasmic — reticulum Golgi Bodies	pages 53-58
4. State and describe the functions of the plasma membrane.	pages 59
5. Describe active and passive transport processes and their functions: diffusion, osmosis, active transport, and endocytosis	pages 60--63
6. Describe the cell cycle, and the functions of mitosis in humans	page 402
7. Describe the events of mitosis, and the changes in the cell during each phase	pages 407-409
8. Complete the Laboratory Exercise Three –Microscope and Cells	

BIOL 108	Human Biology	# 4 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **HUMAN BODY ORGANIZATION, INTEGUMENTARY SYSTEM AND CANCER**

Unit Objective: Understand cell reproduction and control. Discover how the disruption of the cell cycle can cause Cancer. Discuss causes, treatments and prevention of Cancer. Discuss the ethical issues of Cloning, Alternative treatments and prophylactic surgery. Discuss skin structure and skin Cancer

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter Seventeen: Cell Reproduction; Chapter Eighteen: Cancer; Chapter Four: Tissues

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One Week

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. List and describe the major systems of the human body.	page 89-90
2. List and describe the functions of the four tissue types: Epithelium, Connective, Muscle, and Nervous	pages 80, 83, 87, 88
3. Describe directional terms, body planes, body cavities,	pages 91
4. Describe the layers and structures found in human skin.	pages 92-93
5. and the functions of each: epidermis, dermis, glands Hair follicles. Discuss the causes of Skin cancer, and prevention.	page 85
6. Discuss the skin's role in thermal homeostasis	pages 94-96
7. Discuss the effects of burns on the skin.	"Apply what you know"
8. Describe causes of Cancer, treatments and prevention	pages 423-428, 431
9. Complete Laboratory Exercise: Integumentary System and Human Body Organization	

BIOL 108	Human Biology	# 5 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE SKELETAL SYSTEM**

Unit Objective: Identify and discuss the structure and functions of the skeletal system. Describe the common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter 5: The Skeletal System

Method of Evaluation: Unit Exam, Laboratory exercises and

practicals Estimated Time to Achieve: One Week

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Describe the components of the skeletal system.	page 99, 102-103
2. Explain the functions of the skeleton and describe the parts of a long bone.	page 102 page 102, Figure 5.1
3. Compare and contrast spongy and compact bone with microscopic appearance and location.	pages 102 -- 103 respect to
4. Describe the processes of ossification, and discuss the dynamic remodeling of bone in its homeostasis.	pages 105 -- 106
5. Discuss the hormonal controls of bone growth and maintenance.	page 312-313. Figure 13.14 page 313
6. List the components of the axial and appendicular skeletons of the human body.	page 107, Figure 5.5
7. Describe the following disorders of the skeletal system: osteoporosis osteoarthritis rickets rheumatoid arthritis arthritis	pages 113-116
8. Complete Laboratory Exercise: Skeletal system	

BIOL 108	Human Biology	# 6 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE MUSCULAR SYSTEM**

Unit Objective: Identify and discuss the structure and functions of the muscular system. Describe the common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter 6: The Muscular System

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One Week

Learning Objectives Experiences	**Recommended Learning**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. List and describe the functions of the muscular system, and the three types of muscle tissue	Page 119 -- 123
2. Compare and contrast skeletal, cardiac and smooth muscle to include control, microscopic appearance, location and functions.	page 135, table 6.3 page 135
4. Describe the organization (gross to molecular levels) of skeletal muscle.	pages 124 -- 125
5. Describe the functioning of a neuromuscular junction.	page 127
6. Explain the structure of the sarcomere, unit of muscle contraction	page 127
7. Explain the mechanism of muscle contraction.	pages 126 -- 129
8. List and describe the sources of energy for muscles.	Table 6.1 page 129
9. Describe the following states of muscle homeostasis: oxygen debt heat production muscle fatigue	page 130 -- 131
10. Describe the following common disorders of the muscular system: spasm cramp tetanus pulled muscle muscular dystrophy fasciitis	pages 136
11. Complete the Laboratory Exercise: Muscular System	

BIOL 108	Human Biology	# 7 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE NERVOUS SYSTEM**

Unit Objective: Identify and discuss the structure and functions of the nervous system. Describe the mechanisms of sensations. Describe common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapters 11: The Nervous System;;

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One and one half Weeks

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion;; Textbook Readings
1. Discuss the functions and parts of the nervous system.	page 246
2. Identify the components of a neuron (nerve cell).	pages 247;; Fig. 11.2 p. 247 Fig. 11-7 page 252
3. Define glial cells and discuss their functions. Describe the role of Schwann cells in creating the myelin sheath. Explain how the myelin sheath increases impulse conduction speed.	pages 251-- 252
4. Describe a nerve impulse using the terms: graded potential resting potential, action potential, and threshold. Include mechanisms such as sodium/potassium pump and ion flow across axon membrane	pages 248-- 251
5. Discuss chemical transmission. Describe neurotransmitters and their release from axon terminals. Discuss the functions of Nerves the Peripheral Nervous	pages 253-254
6. System and in the somatic spinal reflex arc.	pages 255-256
7. Describe and compare the components of the Autonomic Nervous System: the sympathetic and parasympathetic divisions	pages 256 -- 258, Figure 11.2
8. Describe the protective coverings of the Central Nervous System, Cerebrospinal fluid and the Blood Brain barrier	page 259-260
Describe the organization and functions of the spinal cord.	page 260, Figure 11.14
9. Identify the following areas of the brain: Medulla oblongata, Cerebellum, Pons, Midbrain, hypothalamus and thalamus, Limbic system, functional areas of the cerebral cortex. Discuss the major functions of the areas of the brain listed above.	pages 261 -- 264
10. Describe the following disorders of the nervous system:	
Spinal Cord injuries, and repair	page 268,
Health & WellnessTraumatic Brain injury, Drug abuse, ALS	page 244-245,
Meningitis, epilepsy, Alzheimer's Disease, Parkinsons' Disease	pages 267-270
11. Bioethics: Mental Illness Parity Debate	Internet sources
12. Complete the Unit Seven Laboratory Exercise on the Nervous System	

BIOL 108	Human Biology	# 8 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE SENSORY SYSTEMS**

Unit Objective: Identify and discuss the structure and functions of the sensory systems. Describe the mechanisms of sensations. Describe common disorders associated with sense organs.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Seventh Edition

Chapter 12: Sensory Mechanisms;;

Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One half Week

Learning Objectives	**Recommended Learning Experiences**
1. Describe the various sensory receptors of the skin	page 279-281
2. Describe the chemoreceptors of taste and smell.	pages 282 -- 283
3. Describe the sensory mechanisms of the human ear for sound, balance and gravity. Identify structures within the ear.	pages 285, 287 Figures 12.10 and 12.12
4. Identify structures within the human eye, and their corresponding functions.	page 289 Figure 12.14 page 289
5. Describe how photoreceptor cells, rods and cones, function in vision.	page 291
6. Describe the following disorders of special senses: Deafness, Meniere's disease, Cataracts, Retinal detachment, Macular degeneration	pages 294-295
7. Complete the Unit Eight Laboratory Exercise on the Sensory systems.	

BIOL 108	Human Biology	# 9 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE CARDIOVASCULAR SYSTEM**

Unit Objective: Identify and discuss the structure and functions of the cardiovascular system. Describe the common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition

Chapters 7 and 8

Method of Evaluation: Unit Exam Laboratory exercises and practicals Estimated Time To Achieve: Two Weeks

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Describe the functions and the characteristics of blood.	page 142
2. List and describe the components of blood, including the formed elements and the fluid portion.	pages 143 - 148
3. Discuss hemostasis.	pages 149 - 150
4. Discuss the ABO and Rh blood group systems and the the characteristics of each. Discuss blood donation	pages 151-154
5. Describe the following blood disorders: Anemia, Leukemia Mononucleosis, Blood poisoning.	pages 156 - 157
5. Compare and contrast the vessels of the circulatory system.	pages162 -- 166
6. Describe the gross anatomy of the heart, including the layers of the heart wall, the chambers and valves of the heart and coronary arteries	pages 167 – 169, 172 Figure 8.7 page 168 Figure 8.10 page 171
7. Describe the sequence of blood flow through the heart.	pages 168 Fig 8.8, 171, figure 8.11
8. Identify the electrical conduction system of the heart responsible for coordination of contraction. Describe the ECG	pages 173, including Figure 8.13 Figure 8:14 page 173
9. Describe blood pressure. List the factors that influence blood pressure and describe its measurement.	pages 174
11. Describe the following common disorders of the cardiovascular system: Hypertension, Angina, heart failure, congestive heart failure Embolism, Stroke, Valve disease, Atherosclerosis	pages 160 page 170, 172, 174, 175--177, 180-- 184
12. Complete the Unit 9 Laboratory Exercise: Cardiovascular System	

BIOL 108	Human Biology	# 10 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE REPRODUCTIVE SYSTEM**

Unit Objective: Identify and discuss the structure and functions of the reproductive system. Describe the common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition

The Reproductive System, Chapter 16
Method of Evaluation: Unit Exam, Laboratory exercises and practicals

Estimated Time To Achieve: One Week

Learning Objectives	**Recommended Learning Experiences**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Discuss the functions of the endocrine system.	pages 298-301 Figures 13.1 page 301,
2. List the major glands of the endocrine system and discuss each with respect to location and hormone production.	13.5 p. 305, p. 314
3. Name and locate the anatomical structures of the male reproductive system.	pages 376 -- 377, Table 16.1
4. Describe the production of sperm and testosterone in testes.	pages 378
5. Describe the structures of the female reproductive system.	pages 379 - 381
6. Describe in detail the female menstrual cycle as uterine and coordinated. Discuss the role of the corpus luteum as well as LH and FSH of the pituitary	pages 381-383 ovarian cycles
7. Describe the events involved in fertilization.	page 385
8. List the currently accepted methods of birth control and their respective modes of action.	pages 386 – 388
9. Describe how the early embryo develops and differentiates. Discuss formation of the placenta.	pages 482-483;; 485;; 490 Figure 21.8
10. Describe the following common disorders of the reproductive system: Infertility, gonorrhea, syphilis, chlamydia, Herpes, HPV	pages 389 - 396
11. Complete the Unit 10 Laboratory Exercise on Reproduction	

BIOL 108	Human Biology	# 11 of 11 Units	4
Course No.	Title		Credits

Name of Unit: **THE IMMUNE SYSTEM AND HIV**

Unit Objective: Identify and discuss the structure and functions of the lymphatic system. Describe the common disorders associated with this system.

Textbook: **Human Biology, Concepts and Current Issues, Michael D. Johnson** Eighth Edition Chapter 9: The Immune System and Mechanisms of Defense

Method of Evaluation: Unit Exam, Laboratory exercises and

practicals Estimated Time To Achieve: One Week

Learning Objectives Experiences	**Recommended Learning**
The Student Will Be Able To:	Class Discussion Textbook Readings:
1. Identify the various types of pathogens	pages 191 -- 192
2. Discuss the functions and components of the immune system Figure 9.3.	pages 193 -- 195,
3. Describe the methods of Innate immunity, keeping pathogens out of the body, and non-specific defenses	pages 195 -- 199
4. Discuss Specific defense mechanisms: Antigen tagging by antibodies. Describe the benefits of breast feeding infants.	pages 200 -- 203 page 206
5. Describe the B cell response of cloning, plasma cell and antibody production, and memory.	pages 202
6. Describe the cell-mediated defense involving T lymphocytes, and the types of T lymphocytes.	pages 203-204
7. Bioethics: Discuss the HIV virus and AIDS. Discuss the impact of the disease upon society, and how society impacts on the pandemic. Discuss transmission, prevention and treatments.	pages 212-216
8. Describe the following common disorders of the lymphatic system, Allergy, Autoimmune disorders: Lupus, Rheumatoid Arthritis, MS	pages 210-211
9. Complete the Unit 11 Laboratory Exercise	