Pre-Health Occupations		*Course to Program Map*			
Program Outcomes: Upon completion of the program, graduates will be able to…	**Institutional Skills**	**demonstrate knowledge of basic terminology related to healthcare.**	**demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.**	**critically analyze scientific evidence underlying a healthcare problem or condition.**	**integrate professional communication skills through oral and/or written presentations.**
Courses					
BIOL 105 General Biology		I	I	I	I
BIOL 114 Biology I		I	I	I	I
BIOL 115 Biology II	2		IR		RMA
BIOL 210 Anatomy & Physiology	4	IRMA	IR	IR	
BIOL 211 Anatomy & Physiology I	3	IR	IR	IR	IR
BIOL 212 Anatomy & Physiology II	14	RMA	RMA	RMA	RMA
BIOL 213 Microbiology	15	MA	MA	MA	MA
BIOL 1102 Special Topics in Science: Human Dissection	2	MA	MA	MA	MA
CHEM 105 General Chemistry		IR	IR	IR	IR
MATH 110 Fundamentals of Statistics					R

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

Essential Skills	
1	written communication
2	oral communication
3	critical thinking
4	cultural diversity
5	social responsibility

Employability Skills	
C	communication
P	problem solving
W	work ethic

BIOL 105 General Biology	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
demonstrate an understanding of the nature of science including scientific processes and scientific methods.	I			
demonstrate an understanding of the levels of organization and emergent properties of life including the following levels: chemical, cellular, organ, organ system, organismal, ecological.	I		I	I
demonstrate an understanding of bioenergetics including enzyme activity, metabolism, and cellular respiration and photosynthesis.		I	I	
demonstrate an understanding of the importance of reproduction in maintaining the continuity of life including mitosis, meiosis, differentiation and development, and diversity of reproductive strategies.	I			
demonstrate an understanding of applying principles of genetics to unity and diversity of life including classical genetics and molecular genetics.	I			I
demonstrate an understanding of discussing evolution as the mechanism of change in biology including natural selection, speciation, and diversity of life and classification.				
demonstrate an understanding of the principles of ecology including ecosystem organization, ecological interactions, and environmental issues.		I		

demonstrate knowledge of laboratory topics and skills including microscopy, quantitative measurement skills incorporating the metric system, analytical and statistical skills including presenting and/or interpreting graphs and tables, experience with living organisms in the laboratory and/or field setting, and identification and proper use of laboratory equipment.			I	

BIOL 114 Biology I	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
demonstrate an understanding of the nature of science: scientific processes, scientific methods.	I			
demonstrate an understanding of the levels of organization and emergent properties of life: basic biological chemistry, structure and function of biological molecules, cellular structure and functions.	I		I	I
demonstrate an understanding of bioenergetics: enzyme activity, cellular respiration, photosynthesis.		I	I	
demonstrate an understanding of cellular reproduction: binary fission, mitosis, meiosis.	I			
identify the basic principles of Mendelian and molecular genetics, and relate these to the basic principles of Natural Selection and evolution: classical genetics, molecular genetics, DNA replication, gene expression and regulation.	I			I
design and perform experiments in a laboratory setting: microscopy, quantitative measurement skills incorporating the metric system, analytic and statistical skills including presenting and/or interpreting graphs and tables, experience with living organisms in the laboratory.				

BIOL 115 Biology II	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
summarize and explain the processes and mechanisms of evolution.				
interpret organismal diversity using phylogenetic hypotheses.				
relate structure to function in organisms		**IR**		
explain how organisms interact with their environments.		**IR**		
design and perform experiments incorporating organisms in a laboratory setting.				**R**
develop observational skills from the microscopic to the macroscopic and ecological levels.		**IR**		
apply quantitative measurement skills incorporating the metric system.				
interpret and communicate data using appropriate analytical and statistical skills.				**MA**

BIOL 210 Anatomy & Physiology	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
demonstrate measurable understanding of descriptive anatomical and directional terminology.	**MA**	**I**		
demonstrate measurable understanding of the basic concept of homeostasis and how homeostatic mechanisms apply to body systems.	**I**	**R**	**I**	
demonstrate measurable understanding of basic chemistry and cellular structures and function.	**I**	**I**		
to demonstrate measurable understanding of the basic tissues of the body, their location and functions.	**I**	**I**	**I**	
demonstrate measurable understanding of major gross and microscopic anatomical components of the integumentary system and describe the functions of the system.	**I**	**I**	**IR**	
demonstrate measurable understanding of major gross and microscopic anatomical components of the skeletal system and explain their functional roles in osteogenesis, repair, and body movement.	**R**	**R**	**R**	
demonstrate measurable understanding of major gross and microscopic anatomical components of the muscular system and explain their functional roles in body movement, maintenance of posture, and heat production.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the nervous system and explain their functional roles in communication, control, and integration.	**R**	**R**	**R**	

demonstrate measurable understanding of the major gross and microscopic anatomical components of the eye and ear and explain their functional roles in vision, hearing and equilibrium - Students should also be able to identify and locate the receptors responsible for olfaction and gustation and briefly describe the physiology of smell and taste.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the endocrine system and explain the functional roles of their respective hormones in communication, control, and integration.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the cardiovascular system and explain their functional roles in transport and hemodynamics.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the lymphatic system and explain their functional roles in fluid dynamics and immunity.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the respiratory system and explain their functional roles in breathing/ventilation and in the processes of external and internal respiration.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the digestive system and explain their functional roles in digestion, absorption, excretion and elimination.	**R**	**R**	**R**	
demonstrate measurable understanding of the functional relationship among cellular, tissue and organ level metabolism, the role nutrition plays in metabolism, and the mechanisms by which metabolic rate is regulated in the body.	**R**		**R**	

demonstrate measurable understanding of the major gross and microscopic anatomical components of the urinary system and explain their functional roles, including the following topics, general functions of the urinary system, gross & microscopic anatomy of the urinary tract.	**R**	**R**	**R**	
demonstrate measurable understanding of the physiology of the homeostatic mechanisms that control fluid/electrolyte and acid/base balance, including the following topics- regulation of water intake & output, description of the major fluid compartments.	**R**		**IR**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the reproductive system and explain their functional roles in reproduction and inheritance.	**R**	**R**	**R**	

BIOL 211 Anatomy & Physiology I	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
demonstrate measurable understanding of descriptive anatomical and directional terminology.	I	I		
demonstrate measurable understanding of the basic concept of homeostasis and how homeostatic mechanisms apply to body systems.	I	I		
demonstrate measurable understanding of basic chemistry and cellular structures and function.	I	I		
to demonstrate measurable understanding of the basic tissues of the body, their location and functions.	R	R	R	
demonstrate measurable understanding of major gross and microscopic anatomical components of the integumentary system and describe the functions of the system.	R	R	R	I
demonstrate measurable understanding of major gross and microscopic anatomical components of the skeletal system and explain their functional roles in osteogenesis, repair, and body movement.	R	R	R	I
demonstrate measurable understanding of major gross and microscopic anatomical components of the muscular system and explain their functional roles in body movement, maintenance of posture, and heat production.	R	R	R	R
demonstrate measurable understanding of the major gross and microscopic anatomical components of the nervous system and explain their functional roles in communication, control, and integration.	R	R	R	R

BIOL 212 Anatomy & Physiology II	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
demonstrate measurable understanding of the major gross and microscopic anatomical components of the eye and ear and explain their functional roles in vision, hearing and equilibrium - Students should also be able to identify and locate the receptors responsible for olfaction and gustation and briefly describe the physiology of smell and taste.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the endocrine system and explain the functional roles of their respective hormones in communication, control, and integration.	**R**	**R**	**R**	**R**
demonstrate measurable understanding of the major gross and microscopic anatomical components of the cardiovascular system and explain their functional roles in transport and hemodynamics.	**R**	**R**	**R**	**R**
demonstrate measurable understanding of the major gross and microscopic anatomical components of the lymphatic system and explain their functional roles in fluid dynamics and immunity.	**R**	**R**	**R**	**R**
demonstrate measurable understanding of the major gross and microscopic anatomical components of the respiratory system and explain their functional roles in breathing/ventilation and in the processes of external and internal respiration.	**MA**	**MA**	**MA**	**M**

demonstrate measurable understanding of the major gross and microscopic anatomical components of the digestive system and explain their functional roles in digestion, absorption, excretion and elimination.	**MA**	**Ma**	**MA**	**MA**
demonstrate measurable understanding of the functional relationship among cellular, tissue and organ level metabolism, the role nutrition plays in metabolism, and the mechanisms by which metabolic rate is regulated in the body.	**R**	**R**	**R**	**R**
demonstrate measurable understanding of the major gross and microscopic anatomical components of the urinary system and explain their functional roles, including the following topics, general functions of the urinary system, gross & microscopic anatomy of the urinary tract.	**MA**	**MA**	**MA**	
demonstrate measurable understanding of the physiology of the homeostatic mechanisms that control fluid/electrolyte and acid/base balance, including the following topics- regulation of water intake & output, description of the major fluid compartments.	**R**	**R**	**R**	
demonstrate measurable understanding of the major gross and microscopic anatomical components of the reproductive system and explain their functional roles in reproduction and inheritance.	**MA**	**MA**	**MA**	

BIOL 213 Microbiology	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
understand major contributions to the development of the field of microbiology.		**MA**		**MA**
describe chemical principles as they apply to microorganisms.				
appreciate the diversity of the microbial world.	**MA**			
describe the basic morphology of prokaryotic organisms.			**MA**	
describe how microorganisms grow and their respective nutritional requirement.	**MA**			
describe basic metabolic pathways utilized by microorganisms.		**MA**		
describe genetic mechanisms utilized by microorganisms and how they exchange information.	**MA**			
describe the nature of disease and how host organisms defend against disease.			**MA**	

BIOL 1102 Special Topics in Science	*Curriculum Map*			
Program Outcomes	**demonstrate knowledge of basic terminology related to healthcare.**	**demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.**	**critically analyze scientific evidence underlying a healthcare problem or condition.**	**integrate professional communication skills through oral and/or written presentations.**
Course SLO: Students will be able to				
proficiently use of dissection tools, terminology, and various techniques of appropriately visualizing structures.	**MA**			**MA**
identify surface anatomical landmarks and give detailed description of the underlying gross anatomical structures.	**MA**	**MA**	**MA**	**MA**
demonstrate proficient knowledge of bony skeletal landmarks.	**MA**	**MA**	**MA**	**MA**
identify and describe the major gross and microscopic anatomical components of the endocrine system with adequate explanation of the function(s) of selected hormones.	**MA**	**MA**	**MA**	**MA**
identify and describe the major gross and microscopic anatomical components of the cardiovascular system.	**MA**	**MA**	**MA**	**MA**
accurately describe the tissues supplied and/or drained by selected vascular structures in the region of dissection.	**MA**	**MA**	**MA**	**MA**
identify and describe the major gross and microscopic anatomical components of the lymphatic system.	**MA**	**MA**	**MA**	**MA**
identify and describe the major gross and microscopic anatomical components of the digestive system.	**MA**	**MA**	**MA**	**MA**

identify and describe the major gross and microscopic anatomical components of the renal system.	**MA**	**MA**	**MA**	**MA**
identify and describe the major gross and microscopic anatomical components of the male and female reproductive systems.	**MA**	**MA**	**MA**	**MA**
demonstrate knowledge of each of the above by presenting completed dissections to their peers, course instructor, and selected members of the public.	**MA**	**MA**	**MA**	**MA**

CHEM 105 General Chemistry	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
explain the chemical context of topics as they relate to the natural sciences and society.		**I**	**I**	**I**
demonstrate knowledge of atoms, the periodic table, molecular structure and bonding.		**I**	**R**	**I**
recognize differences between phases of matter.	**I**			
identify and analyze different types of chemical reactions, including energetics and stoichiochemistry.		**R**	**R**	**RA**
solve problems involving solutions and gases.		**RA**		
record quantitative and qualitative data correctly. Critically analyze data and chemical information from various sources responsibly and accurately.	**R**	**RA**	**R**	**RA**
apply knowledge of good laboratory practices.			**RA**	**RA**

MATH 110 Fundamentals of Statistics	*Curriculum Map*			
Program Outcomes	demonstrate knowledge of basic terminology related to healthcare.	demonstrate knowledge of general biological concepts in nutrition, anatomy, physiology, and pathology.	critically analyze scientific evidence underlying a healthcare problem or condition.	integrate professional communication skills through oral and/or written presentations.
Course SLO: Students will be able to				
exhibit professional behavior.				
utilize communication skills.				**R**
utilize the aide role & responsibilities to deliver client care as directed by care plan.				
demonstrate the standards of aid care related to safety & First Aid.				
demonstrate the standards of aide care related to infection prevention & control.				
demonstrate the standards of aide care related to the needs of client mobility, restoring & maintaining mobility of client.				
utilize the standards of aide care related to comfort & rest of clients.				
utilize the standards of aide care related to elimination needs of clients.				
demonstrate the standards of aide care related to personal care & grooming of clients.				
demonstrate observing, reporting & documenting for client needs.				
demonstrate the standards of aide care related to nutrition & fluids of clients.				
demonstrate the standards of aide care related to restoring nutrition & elimination of clients.				
identify the physical changes accompanying aging and sexuality in aging.				

utilize aide care of standards to understand the clients personal living space.				
identify ethical and legal concepts in aide care.				
utilize aide care related to the biological, cultural, spiritual and psychosocial needs of clients with End of Life Care.				
demonstrate measuring & recording vital signs for client assessment.				