



## COURSE OUTLINE: BIO181 - BIOLOGY II

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Approved: Bob Chapman, Chair, Health

<b>Course Code: Title</b>	BIO181: BIOLOGY II FOR PCD
<b>Program Number: Name</b>	3060: PRE-HEALTH CERT DIPL
<b>Department:</b>	PRE-HEALTH
<b>Semesters/Terms:</b>	20W
<b>Course Description:</b>	This course will continue to introduce the student to the basic concepts of biology, both general and human. The course follows topics introduced in Bio I PHS PCD with a review of the organization of the body into cells, tissues and organ systems. Topics include the anatomy and physiology of the following human organ systems: endocrine, cardiovascular, respiratory, digestive, urinary, lymphatic and immune. In addition, there will be an introduction to infectious organisms and basic Mendelian genetics. By the end of the course, students will have an appreciation for the complexity of the human body and its functions.
<b>Total Credits:</b>	4
<b>Hours/Week:</b>	4
<b>Total Hours:</b>	60
<b>Prerequisites:</b>	BIO180
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<b>3060 - PRE-HEALTH CERT DIPL</b>
<b>Please refer to program web page for a complete listing of program outcomes where applicable.</b>	VLO 1 Examine fundamental biological concepts, processes and systems of the human body, including the structure, function and properties of the molecules of life, cells, tissues and organ systems in relation to homeostasis and health.
<b>Essential Employability Skills (EES) addressed in this course:</b>	EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
<b>General Education Themes:</b>	Science and Technology
<b>Course Evaluation:</b>	Passing Grade: 50%,
<b>Books and Required Resources:</b>	Human Biology, Anatomy & Physiology for the Health Sciences by Roscoe, Wendi A Publisher: Nelson Edition: 2nd ISBN: 9780176739157



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**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
1. Describe the structure and function of the integumentary system.	1.1 List the functions of the skin. 1.2 Describe the general structure of skin including the layers and appendages.
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Identify the major components and physiology of the lymphatic and immune systems.	2.1 List the functions of the lymphatic system. 2.2 Identify the structures of the lymphatic system and describe the main function of each. 2.3 Describe lymph and its role in immunity. 2.4 Distinguish among various types of leukocytes and describe their role in immunity. 2.5 Describe innate, non-specific immune responses (fever, inflammation, interferon, prostaglandins, etc.).
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Distinguish among various types of infectious agents and describe how each infects the body.	3.1 Describe the normal flora of the human body and their importance. 3.2 Distinguish among infectious agents: bacteria, viruses, fungi and parasites, and briefly discuss their effects on the human body.
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
4. Identify the major components and physiology of the cardiovascular system.	4.1 List the functions of the cardiovascular system. 4.2 Describe cardiac muscle tissue. 4.3 Identify the anatomy of the heart (chambers, valves, blood vessels etc.). 4.4 Trace the flow of blood through the heart, pulmonary and systemic circuits. 4.5 Identify the major blood vessels of the heart (aorta, IVC, SVC, coronary arteries, coronary veins). 4.6 Describe the general structure of blood vessels (arteries, arterioles, veins, venules and capillaries). 4.7 Identify components of blood.
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
5. Identify the major components and physiology of the respiratory system.	5.1 List the functions of the respiratory system. 5.2 Locate and identify the main structures of the respiratory system. 5.3 Define pulmonary ventilation, internal and external respiration. 5.4 Describe the process of breathing (involvement of ribcage and diaphragm, including the application of Boyle's Law). 5.5 Differentiate among various respiratory volumes (vital capacity, tidal volume, inspiratory and expiratory reserve, etc.). 5.6 Describe how oxygen and carbon dioxide are transported in the blood.
<b>Course Outcome 6</b>	<b>Learning Objectives for Course Outcome 6</b>
6. Identify the major	6.1 List the functions of the digestive tract.



	components and physiology of the digestive system.	6.2 Identify the primary and accessory organs of the digestive system and list their general functions. 6.3 Describe how enzymes work. 6.4 Identify where digestive enzymes are produced, their substrates and end products. 6.5 Define pH and discuss its importance in digestion.								
	<b>Course Outcome 7</b>	<b>Learning Objectives for Course Outcome 7</b>								
	7. Identify the major components and physiology of the urinary system.	7.1 List the functions of the urinary system. 7.2 Identify and describe the main function of the structures of the urinary system. 7.3 Describe the structure of a kidney. 7.4 Describe the formation of urine in the nephron. 7.5 Explain the role of the urinary system in maintaining blood pH.								
	<b>Course Outcome 8</b>	<b>Learning Objectives for Course Outcome 8</b>								
	8. Identify the major components and physiology of the reproductive systems.	8.1 Identify male reproductive organs and list their functions. 8.2 Identify female reproductive organs and list their functions.								
<b>Evaluation Process and Grading System:</b>	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> <tbody> <tr> <td>Final Exam</td> <td>20%</td> </tr> <tr> <td>Mid-term Exam</td> <td>20%</td> </tr> <tr> <td>Unit Tests</td> <td>60%</td> </tr> </tbody> </table>		Evaluation Type	Evaluation Weight	Final Exam	20%	Mid-term Exam	20%	Unit Tests	60%
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Final Exam	20%									
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<b>Date:</b>	December 17, 2019									
<b>Addendum:</b>	Please refer to the course outline addendum on the Learning Management System for further information.									