

COVID -19
Spring 2021
The Human Body - Response to Viral invasion

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This course will include a brief overview of the structure and function of the body as a whole. It is a science course focusing on the anatomy and physiology of the body.

The body is composed of building blocks which are chemicals. These chemicals build cells which build organs. Organs work together to form 11 **organ systems**. Each organ system has specific functions to help the human organism maintain homeostasis or balance which enables us to function as a living being.

In addition we will look at some of the changes that occur when the body is invaded by microorganisms, specifically the Covid 19 virus. Changes in the body related to disease are studied under the branch of science called pathophysiology.

We will look at the structure of a virus and gain a brief understanding of how it invades our bodies. We will then look at the responses the body has to this invasion. We will study a cell and the cell nucleus as well as several body systems that are particularly involved in the pathophysiological response to this virus.

This course will focus on **the response to COVID -19**
Systems studied will include the circulatory, respiratory ,and immune systems. We will consider the changes that occurs in these systems as the Covid 19 virus spreads throughout the body and how the body controls the virus and allows the body to return to normal functioning.

Handouts will be used as a guide to weekly content. Lecture and You-tube videos will be utilized during presentation of the material. Questions are always welcome.

Outline

2/4 Introduction to the course.

- Levels of organization of the body: chemical, cellular, tissue, organ, system and organism.

2/ 11

- Chemical composition of the body: proteins, carbohydrates, lipids and nucleic acids.

2/18

- The human cell. Structure and function. RNA, DNA. Genes and chromosomes.

2/25

- What is a virus? How does it invade the human body? What is COVID? Effect of COVID 19 on cell function.

3/4

- Body systems primarily affected by viral infections –circulatory, lymphatic, immune, respiratory.

3/11

- Respiratory system - airways and lungs, gas exchange> Response to COVID.

3/18

- Spring break. No class

3/25.

- Circulatory system, Lymphatic system. Response to COVID.

4/1 -4/15

- Immune system – structure and function. How the body responds to infections. Inflammatory response. Immunizations – vaccines