

Anatomy and Physiology I

Learning Guide: Chemistry of Life

Overview – An understanding of certain chemical principles and processes is necessary to continue the discussion in A&P. This module does not replace a chemistry course but merely attempts to provide sufficient background for future discussions. You may find that many points may be review to you, but regardless, a repeat exposure at this point will undergird future discussions.

Learning Objectives

- Describe chemical bonding classifications.
- Interpret a chemical equation in relation to reaction rates
- Identify factors that affect the rate of reaction
- Recognize the difference between salts, acids, and bases
- Interpret the pH scale
- Explain how the structure of water affects physiological processes.
- Describe the relationship between the structure and function of carbohydrates, lipids, and proteins.
- Explain the bicarbonate buffer system
- Explain the process of emulsification

Getting Started – As we proceed from one topic to another, you will find that newer topics will build upon those previously presented. Therefore, progress through the material thoughtfully and make connections between the various issues and principles shown. This module is large, but you will find that it builds sequentially.

The module is divided into three sections:

1. Basic principles of chemistry and bonding
2. Inorganic Chemistry
3. Organic Chemistry

Exam(s) – As this exam is large in scope it is helpful to divide it into two exams if this is possible. The [Course Schedule](#) will indicate if this is being done in your class.

The assessment sports a variety of questions. There are two guided essays:

1. Buffer System (discussed in section #2)

2. Emulsification (discussed in section #3)

If the exam is divided into two exams, these will be:

1. **Chem. Part #1** (Basic Principles and Inorganic Chemistry) - will cover sections #1 and #2
2. **Chem. Part #2** (Organic Chemistry) - will cover section #3

Check your syllabus or course schedule to see if you are doing the material in one exam or dividing it between two exams.

Final Point – The “Chemistry of Life” module can be challenging, but you should find many discussion points in a review of past coursework as you work through the unit and master each section.