

Biochemical calculations

BCH 312

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Course Main Objective

To teach students the most common calculation problems in biochemistry including calculating and expressing the concentration in different ways, pH measurements and buffer composition and theory, ionization of weak acids. Spectrophotometry theory and its applications in biochemistry mainly in enzymology and clinical chemistry. How to present your data in a scientific manner, Statistical analysis of data.

Course Content

1. Glassware and tools, molarity, normality, w/v%, v/v%, w/w%, molality.
2. Stock and standard solutions, simple dilutions , and serial dilutions.
3. pH theory, pH–meter calibration, standard buffers.
4. Ionization of weak acids and bases, Buffers
5. Spectrophotometry, spectrum, Beer-Lambert law, absorption spectrum,
6. calibration curves, extinction coefficient, applications in enzymology and
7. clinical chemistry.
8. Data presentation and statistical analysis of data (use of MS Excel)